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ECONOMIC AND INDUSTRIAL AFFAIRS

No. 2147

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East Berlin AW DDR AUSSENWIRTSCHAFT in German Vol 9 No 23, 3 Jun 81 p 12

[Article by Information and Public Relations Department, GDR Ministry for Foreign Trade: "From the Chemical Industry of Socialist Countries"]

[Text] Development Plans of the People's Republic of Bulgaria

The chemical industry of the People's Republic of Bulgaria accounts for approximately 20 percent of the national income produced in the industrial sphere and it is one of the most important export branches. In the expired 1976/80 plan period, chemical production increases averaged 8.7 percent per annum.

The People's Republic of Bulgaria is providing for priority-based development in the chemical industry's 1981/1985 plan period as well; there will be about a 50-percent expansion vis-a-vis 1980. It is expected that this branch of industry will by 1990 have increased its production to more than 10 billion leva (1985 figure: 7.5 billion leva; 1980 figure: 5.2 billion leva). The highest production increase rate is planned for plastic materials processing (annual average 19.2 percent), for cosmetics production (13.7 percent), and rubber goods production (12.6 percent).

The People's Republic of Bulgaria has more than 30 chemical enterprises and combines, which are constantly being expanded and modernized. Investments are concentrated particularly on rationalization and expanding the capacities of the chemical combines at Burgas, Devnya, Dimitrovgrad, and Yambol. Approximately 50 percent of the entire chemical industry investment funds are provided for this purpose. In Devnya, investment activity is oriented primarily toward expanding heavy calcinated soda production to 400,000 tons per year and to an annual production of thermal phosphoric acid of 50,000 tons per year. In addition, facilities for the production of acetate, ammonia, and plant protectives are being constructed.

The combine in Dimitrovgrad is the oldest chemical enterprise in Bulgaria. The first sulphuric acid production facilities had begun operating 29 years ago. Since then, the combine has been expanded four times. In the meantime, sulphuric acid production increased six-fold, and phosphorous fertilizer production increased five-fold. The biggest project in the current five-year plan period is the setting up of one production line each for the production of ammonia, nitric acid, and ammonium nitrate on the basis of natural gas from the USSR. Almost 400 million leva have been invested for this purpose. In 1984, it will be possible to produce twice as much ammonia as is being produced currently.

The chemical enterprises in Burgas, Pleven, Ruse, and Grudovo are part of the Nephtokhim industrial combine. For the further development of this combine, approximately 40 percent of the investment funds provided for the entire chemical industry had been appropriated for the 1976/80 plan period. At the present time, 10 additional plants are coming into being at the main enterprise at Burgas, where primarily gasoline, diesel fuel, synthetic rubber and chemical fibers are produced. In addition, the aromatic hydrocarbon producing plant is to be expanded at an accelerated pace. Modernization investment activities are also to be carried out in the second large-scale enterprise of the combine at Pleven. The Pleven plant processes mainly domestic petroleum and specializes in the production of mineral oils, unrefined paraffin and bitumen. The most important facilities to come into being by 1985 are those for the production of ethylene benzine and styrole (40,000 tons annually), phenol and acetone (15,000 tons), and divynil (50,000 tons). At the same time, the capacity for petroleum processing is to be expanded by 1 million tons a year. This makes possible an increase in the production of polymers, chemical fibers, synthetic rubber, medicines, refined chemicals, and plant protectives.

In connection with the planned expansion of the production of chemical items, particular attention will in future be paid to the application of waste-free procedures and of procedures for the utilization of waste and by-products which result in connection with the processing of petroleum and the production of motor vehicle tires and plastic materials. It is expected that by 1985 50 percent more products will be obtained in this way from the same quantity of raw materials.

In addition, automation of the production processes by means of increased use of electronic control systems is to be pushed forward. Thus, in the Yambol chemical fiber combine, a microprocessing system is already steering 74 technological processes and controlling 420 other processes. In its preparatory stage is an integrated information and computer center of the chemical industry with 10 computer units and 12 terminals in the ministry and in the most important combines.

One form of cooperation between Bulgarian industrial organizations and firms of the capitalist industrial countries which Bulgaria considers to be most important is the joint construction of chemical installations in third countries. To name some examples, petroleum combines in some Arab countries and petroleum refineries in Zambia and Libya were set up jointly with Italian firms. Austrian enterprises are also expected to participate in deliveries of installations for the production of citric acid. In this manner it is also proposed to construct fertilizer plants in Togo and in the Democratic People's Republic of Algeria. According to Bulgarian sources, favorable conditions for an expansion of third-country cooperation are said to exist also with respect to French firms.

Activation of Capacities in the Socialist Federal Republic of Yugoslavia

In Saponija Yugoslav chemical enterprise is, in the next 5 years, going to invest approximately 1.6 billion dinars for the construction of new facilities and the reconditioning and modernization of existing ones for the production of surface-active substances in Osijek/Drava. In this connection, an installation for the production of the detergent raw material Alkansulfanat is accorded particular attention. Its annual capacity is to amount to 24,000 tons, in which connection a portion of the produced material is intended for export deliveries.

In addition, Yugoslavia intends to resume its production of mercury, which had been discontinued in 1977. For this purpose Indrija, the only Yugoslav mercury mine, is to be activated. The mine probably contains 10 percent of the presently known world deposits of mercury ore and it had already previously had a 7-percent share in world mercury production. Investments totaling 520 million dinars will be necessary for the resumption of mercury production. The necessary work is to be done in 1981/82. It is planned to begin production in 1982; it is expected that approximately 300 tons of mercury will be produced yearly. A total of 60 to 80 tons will be allocated to cover domestic needs. Because of the rising mercury prices, Indrija is expected to obtain foreign currency in the amount of more than 4 million U.S. dollars annually from mercury exports.

USSR Chemical Industry Situation

USSR chemical and petrochemical industry production increased 6.8 fold in the past 20 years. The basic resources which had been created by the end of the Tenth Five-Year Plan period (1980) in the chemical and petrochemical industries are approximately the same as the basic resources at the disposal of the entire Soviet industry in the mid-1950s. In the course of the two preceding five-year plans, the production of fertilizers showed a three-fold increase, and as early as 1973 the USSR thereby moved into first place on the world scale. The production of plastic materials and synthetic resin during this period increased 3.5-fold and chemical fiber production increased almost 2.3 times. For the elapsed Tenth Five-Year Plan period, an accelerated development of the chemical and petrochemical industries was planned, in which connection 85 percent more investment funds were used than in the preceding Ninth Five-Year Plan period. New plants were built and existing ones were expanded, especially in the areas of fertilizers and the estraction of the raw materials needed for them. Such production was particularly taken up by the nitrogen plants in Togliatti, Odessa and Ventspils, the Krasnodarsk chemical works, the Novi-Dzhambul phosporous plant, and the enterprises in Chardu, Samarkand, Ufa, Perm, Cherepovets and Kazan. Parallel with the increasing output of fertilizers, there also came about a corresponding increase of their consumption per hectare of cultivated agricultural acreage. It attained a level of approximately 89 kilograms in 1980. In 1978, the corresponding figure was 82 kilograms, and in 1965 it was 29 kilograms.

Production of selected basic chemicals	1970 (in thousand tons)	1975	1979
Ammonia, synthetic	7,638	11,998	14,927
Sulphuric acid	12,059	18,645	22,370
Soda ash	3,485	4,693	4,782
Caustic soda	1,783	2,395	2,681
Fertilizers (100% effective substance)	13,099	21,998	22,128
Dyestuffs, synthetic	94	89	94
Plant protectives	164	264	283
Plastic materials	1,479	2,390	2,910
Chemical fibers	623	955	1,101
Detergents, synthetic	471	769	869

In the period from 1960 to 1980, the development of the plastic material and synthetic resin industries was characterized by a substantial enlargement of the range of production items, by improvement of the quality of the individual products, and by the starting up of large-scale production facilities with automatically operating sets of machinery and production lines which operate with a high level of work productivity and which make possible continual production processes. In the past 10 years, plastic material and synthetic resin production showed a 2.4-fold increase.

Accelerated development occurred also in the sphere of chemical fiber production, which showed a six-fold increase in the course of 20 years. During this time period, the share of these fibers in the overall use of textile raw materials increased from 11 percent to 23 percent, which made possible the manufacture of new types of fabrics and knitting-trade products. On the world scale, the USSR occupies third place in fabrics production behind the United States of America and Japan.

For the current five-year plan period covering the years 1981 to 1985, high rates of increase have been stipulated for chemical and petrochemical production, as well as for qualitative improvement and an expansion of the range of available items, and for an increased share of polymers and chemical fibers in overall chemical production. Provision has also been made for reinforcing the technical-economic levels of the individual chemical branches on the basis of a broadly carried-out introduction of entirely new technological processes and equipment, rational methods of work and production organization, and on the basis of a fundamental technical modernization of the enterprises.

Cooperation of the Hungarian People's Republic With Foreign Countries

A long-term agreement on mutual deliveries of chemical products amounting to a total value of 160 billion lire in the 1981-1985 period has been signed by the Hungarian Chemolimpex foreign trade enterprise for machinery and chemical industry installations and Montedison SpA, the biggest Italian chemical concern. Contractual relations between the two partners have been in force since 1974. Hungary receives from Italy primarily basic materials for the manufacture of plastics (polyethylene, polypropylene, polystyrol), organic chemicals (acetone, phenol), as well as anorganic chemicals (tiraniary dioxide) and delivers to its Italian partner mainly aromatic hydrocarbon compounds (propylene). In the past year, the value of the mutual deliveries amounted to more than 36 billion lire. The comparative figure for 1979 was 28 billion lire. The Italian enterprise signed an additional agreement with the Hungarian Pharmacological Institute on joint pharmacological and clinical-pharmacological research work. In addition, both partners are engaged in negotiations concerning the setting up of a joint enterprise in the Hungarian People's Republic for the manufacture of machines for the chemical industry.

Mineralimpex, the Hungarian foreign trade concern, and the Hungarian Mining Research Institute have signed with the Occidental Petroleum Corporation of the United States a skeleton agreement on scientific-technical and economic cooperation in the utilization of raw materials. In this agreement, both sides have committed themselves to work out methods of cooperation in connection with prospecting for and production of petroleum, natural gas, and solid minerals, as well as of joint production and joint sale of various chemical products. In addition, the partners in this agreement propose to set up joint firms and to be jointly active in third countries.

The Hungarian People's Republic has signed a skeleton agreement with Hoechst A. G. of the FRG on future scientific-technical cooperation. The purpose of this agreement is to intensify the economic relations between Hungarian industry, Hoechst, A. G., and the Hungarian research installations. This agreement forms the basis for the realization of scientific-technical projects which are of interest to both sides.

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ECONOMIC PROBLEMS OF CHEMICAL INDUSTRY EXAMINED

Tirana PROBLEME EKONOMIKE in Albanian No 3, Jul-Sep 80 pp 52-63

/Article by Hasan Banja and Islam Kokona: "The Economic Aspects and Problems of the Creation and Development of the Chemical Industry"[1]/

/Text/ During the years of the people's government, Albania created its national multibranch heavy and light, extraction and processing industry, capable of satisfying better and better the needs of the economy, of the people and of defense. The development of the chemical industry has an important role and position in the framework of socialist industrialization.

1. The Creation of the Chemical Industry and the Role and Main Characteristics of its Development

The chemical industry is a completely new branch of our industry. Its foundation was laid especially in the 1960's in accordance with the directives of the Fourth Congress of the Third Five-Year Plan and it continued to be invigorated during the following five-year plans. A distinctive characteristic is its rapid development at rates which on an average are several times higher than the rate of increase of overall industrial production. During all this period, the chemical industry affirmed itself as one of the most important branches of industry and of our socialist economy in general. Today, it produces nitrogen and phosphate fertilizers, sulfuric acid, ammonia, nitric acid, hydrochloric acid, calcined and caustic soda, pesticides and herbicides and so forth. Now, these products of the chemical industry are assimilated as mass industrial products which satisfy better and better the needs of the economy and open new horizons of development.

The Seventh Congress of the Albanian Workers Party, in the directives which it approved for the 1976-1980 Sixth Five-Year Plan, devoted a top place to the further development of the chemical industry, both by creating increase and putting into operation new projects and by utilizing existing production capacities more fully. It is expected that in 1980, while the volume of overall industrial production increases by 41-44 percent, compared to 1975, the production of the chemical industry will increase by

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[1] The scientific conference on the Problems for the Further Development of the Synthetic Chemical Industry was held in Tirana on 25 and 26 April of this year. From the material of this conference we are publishing one lecture and two papers.

140-145 percent, or at a rate which is 3.4 times higher. New chemical plants were put into operation, such as the urea plant in Fier which doubled the production of nitrogen fertilizer, the PVC plant in Vlore for the production of polyvinyl chloride, carbide, hydrochloric acid, caustic soda and so forth. In 1979 the chemical industry increased its volume of production about 50 times, compared to 1960; three times, compared to 1970; and two times, compared to 1975. The development at such rates has made it possible for the specific weight of the chemical industry to increase in a continuing manner in overall industrial production and in the production of the means of production, as follows:

	in percentages		
	1960	1970	1979
The specific weight of the production of the chemical industry:			
--in overall industrial production	0.5	3.1	4.7
--in production of means of production, (Group "A")	1.0	5.3	7.3

The development of the chemical industry in our country is characterized by some distinctive characteristics; we believe that the main ones are:

1. At the basis of the development of the chemical industry, we find the party policy for the socialist industrialization of the country, for the priority development of the production of the means of production and for setting up the heavy processing industry in harmony with the needs and demands of industry itself and of the other branches of socialist economy, first of all, of agriculture, by coordinating the order of execution and the level of completion of these needs with the possibilities existing in the country.

In harmony with these, the chemical industry has increased and developed in those directions which have made it possible to satisfy the most essential requirements of our economy with the most needed chemical products such as mineral fertilizers, based on nitrogen and phosphorus, for the intensification of agricultural production; and the acids, soda and other chemical products for the petroleum processing industry, for the enrichment of minerals, for the textile, glass and paper industries and for other branches of the consumer goods production industry.

The use of chemical fertilizers has been one of the main factors in improving the chemical formation of the land and increasing its fertility, in the great successes obtained by agriculture, in increasing production of grains and other crops and in providing bread for a country, such as Albania, which has at its disposal many times less workable land per capita of population than the majority of the other countries in Europe.

In 1979 agriculture received 12 times more chemical fertilizers than in 1960. The quantity of active substance per hectare of worked land was increased by 9 times; this was an important factor for increasing yields in agricultural crops. In 1979, compared with 1960, yields increased as follows: bread grains, 3.6 times; rice, 2.5 times; tobacco, 2.4 times; sugar beets, 2.7 times; and so forth.

2. The chemical industry, with some exceptions, grew and developed on the basis of the processing of raw materials found in the country, such as salt and limestone for the production of soda and chlorine and of their derivatives; petroleum and gas for the synthesis of ammonia and of their derivatives; and pyrites for the production of sulfuric acid and so forth.

Progressing on this road has insured a better encouragement and coordination for the rapid development of the extraction industry and for increasing the volume of its production and for discovering new mineral-rich areas of raw materials, giving a wider and more concrete dimension to the development of industry, in accordance with the principle of relying on our own forces.

3. The chemical industry has grown and developed as a heavy industry of basic products, as a great industry with a large level of concentration of production and of technical equipment. The problem of achieving the best size of production capacities of plants and of their component units (workshops and sections) has been correctly solved in general, in accordance with the conditions of our economy.

From the point of view of territorial dispersion, the construction of projects of the chemical industry has been carried out in accordance with the economic policy of the party so as to bring these projects as near as possible to the sources of raw materials, to the mass consumption centers and to the lines of communications, aiming at a better distribution of production forces in order to remove inequality, inherited from the past, in the development of industry between the various districts and areas in the country.

4. The technical-economic indicators of utilization of the chemical industry are on a satisfactory level. The chemical industry is a profitable branch of our economy. The deadlines for the payment of investments for the construction of the main projects of the chemical industry have shown their great effectiveness, especially, in regard to the production of nitrogen-based chemical fertilizers.

With the present level of prices for the delivery of chemical, nitrogen and phosphatic fertilizers, it is calculated that the increase of production of bread grains per hectare costs the agricultural units about 30 to 50 percent less than the prices of their purchase by the state. It is understood that the production of chemical fertilizers in the country directly influence not only the increase of yields in crops and the increase of agricultural production, but also the reduction of costs, the growth of revenue in enterprises and agricultural cooperatives, and the increase of accumulation and of expanded reproduction in this basic branch of our economy.

Besides the effectiveness reflected in the cost and in the profitability of agricultural production, the chemical industry gives large revenues directly to the economy.

The chemical industry is also very economical from the point of view of its influence in the balance-sheet of foreign trade. In 1979 savings in hard currency from the production of chemical fertilizers in the country represent about one half of the value of the main imported means. Also, the profit in hard currency from the removal from the list of imports of calcined and caustic soda, produced by the soda plant (without the polyvinyl chloride plant), is about 20 percent of the value of its main resources.

From what has been said, it appears that the chemical industry has played an important role in the development and strengthening of the material and technical base of socialism and in increasing social production and national revenues, because it has been and is a branch with great effectiveness and profitability.

II. The Main Economic Problems and the Directions of the Long-Range Development of the Chemical Industry

1. The geological and industrial reserves of useful minerals and of other resources of raw materials of the country are a sure support for the development of the chemical industry.

Basing its economic policy on the great Marxist-Leninist principle of relying on one's own forces, the party aims, through the industrialization of the country, at increasing the power of man and of socialist society over the natural resources of the country so that they do not remain dormant, but are put in economic circulation, so that they will serve as the starting point and as the main factors for the rapid development of production forces, for increasing social production and national revenues, for improving the standards of living of the people and for strengthening the defense capacity of the country.

Progress in the field of science and technology, especially, in the field of chemistry, not only expands the level knowledge, utilization and economic evaluation of raw materials, always, in an increasing number and in the most varied assortments, but also multiplies their profitable utilization and creates the conditions for their complex exploitation.

On the other hand, the organization on the spot of production of basic products of the chemical industry creates the possibilities for its broad and wide development. This development is particularly important for the economic aspect, because, it assures a more complete utilization and evaluation of the resources of raw materials of the country by converting them into good material things, increases assortments and the physical volume of the values to be used, reduces imports and creates opportunities to pass from the export of minerals to the export of processed products in the country.

The data on geological research work show that our country has a powerful and varied base of mineral raw materials for the further development of the chemical industry. The raw materials, which are known and can be provided for this purpose, are numerous. They constitute a base on which we can and must start for the long-range development of the chemical industry and of its important sub-branches. The order and level of their industrial processing is determined by the quantity and quality of geological and industrial reserves that have been discovered, by the level of social expenditures for their extraction and processing, and by the needs of the economy, the demands of and profitability of export and by the technical and material and economic and financial possibilities.

One of the most important and immediate tasks in this field is the solution of the technological problems linked with the enrichment of phosphorites and with the coking of country's coal, so that apatites and coking coal are replaced and so that the effectiveness of production in the relevant industrial branches will be increased.

We believe that the increase of the volume and the expansion of the range of production in the future must be based on the raw materials which are known or which are available and can be known. Such as:

Salt (sodium chloride), both sea salt and mineral salt which, together with limestone, constitute the main raw materials for the production of sodium, of chlorine and of their derivatives needed for the development of the plastics industry, of the synthetic fiber, of pulp, (and) pesticide industry and for a number of chemicals used as auxiliary materials in other branches of industry; phosphatized limestone constitutes the necessary raw material for the production of phosphate fertilizers which will make it possible to replace and reduce import of apatites.

The sulphur-bearing mineral ores, such as pyrites, gypsum and so forth, constitute a sure raw material base for the development of the industry for the production sulphuric acid and of chemical products which can be obtained from its use; complex minerals, such as copper-bearing pyrites, constitute important raw materials not only for non-ferrous metallurgy, but also for the production of sulphuric acid. Another source of raw material for the production of sulphuric acid is provided by the vapors of copper metallurgy and the vapors of the thermoelectric power stations emptied in the atmosphere. The profitable technical solution of this problem would, at the same time, eliminate the pollution of the environment from these gases which are harmful to the health of the people and to the flora and fauna near the copper smelting plants and the thermoelectric power stations.

Natural gas, petroleum and its accompanying gases are the most important and most profitable raw materials for obtaining first class processing products, such as ammonia, acetylene and other basic products which serve, on their own, as raw materials and main materials for the production of nitrogen mineral fertilizers, plastic masses, synthetic rubber, bakelites, synthetic fibers, of dyes, drugs and a number of chemicals and auxiliary materials for the various branches of industry.

From the use of gas, petroleum and by-products of their processing, as raw materials of the chemical industry, a great number of products, most essential for the development of other sectors and branches of the economy and for improving the standards of living of the people, are produced and put into economic circulation, replacing and saving, at the same time, the natural raw materials which are scarce and more expensive. We must particularly stress that the use of methane gas, as a raw material for the chemical industry, is the best and most profitable use of this gas, because, its chemical processing is less expensive than that of coal. It is for this reason that, within the possibilities, the use of gas as energy fuel must be reduced and gas should be replaced by coal.

Another important field for the development of the chemical industry, based on petroleum products, is that of the production of substances for washing (detergents), thus, replacing vegetable and animal fats which are quite scarce food articles.

The coal used for the production of metallurgical coke gives, as by products, tar and coking gases; from the processing of these, a number of chemicals used as raw materials are discharged and used as raw materials for the production of dyes and drugs, or as auxiliary materials for many branches of industry.

Timber is the main raw material for the pulp industry which is also considered a sub-branch of the chemical industry. Other raw materials which are valuable to the various sub-branches of the chemical industry are the dolomites, coastal sands, kaolin, bentonites, bauxites and so forth.

The raw materials available and which can be provided in the country constitute an important promise for expanding the existing sub-branches and for setting up and developing new sub-branches of the chemical industry. Putting these raw materials in economic circulation and improving the level of their value, through the development of the chemical industry, remain a common task for the economic and technical sciences.

2. The development of the chemical industry, in accordance with the increasing needs of the economy, as an important source for export.

So far, the creation and development of the chemical industry has been guided toward the fulfillment of the country's needs.

During the first steps of the creation and development of the chemical industry, in the conditions when the main chemical products were lacking to the economy and were provided by import, it was natural and necessary for its development to aim only, or mainly, at satisfying the needs of the country. In the present conditions the issue is that its development must aim, along with the satisfying of the needs of the country, as the high-priority task, at further increasing its volume, expanding assortments and improving the quality of products, so that exports become a large source of revenues in currency. We think that the solution of this issue, for the further development of the chemical industry, responds to the economic policy pursued by the party for improving the structure of industrial production and of exports, for developing the processing industry at a rapid rate on the basis of the raw materials of the country and for exporting more and more processed products.

The development orientation of the chemical industry in regard to exports is also based on the fact that it has the conditions and possibilities for producing products of high quality according to world standards and, consequently, it is possible to assure a stable market for their export, as they are massive products greatly in demand in the world market. On the other hand, many raw materials used in the chemical industry either cannot be exported at all in their natural condition or their export is difficult and unprofitable.

A studied development of the chemical industry, both in regard to the satisfaction of the needs of the country and to the increase of exports, is an important factor for solving the conflict between the relatively small needs of our economy and the best dimensions of the plants and workshops of their branch, and for the correct determining of production capacities of the chemical enterprises.

The development of the chemical industry both for the needs of the country and for export is obtained both through the export of temporary surpluses of production over the needs of the economy, because, the rates of assimilation of the new production capacities are quicker than the dynamics of the needs of the country, and through the construction of projects with two-fold purposes--for the needs of the country and for exports.

During special periods, limited quantities of production used for the needs of the country can be earmarked for export if this move is required for breaking through the economic blockade and overcoming the temporary difficulties confronted in foreign trade, or if it is required in order to profit from the situations created at the level of export and import prices in the world market.

Therefore, the long-range development of the chemical industry relies on placing raw materials provided in the country in economic circulation, with the main purpose, first of all, of satisfying the requirements of the economy, and secondly, of increasing exports, by developing those sub-branches and those products for which there are more opportunities to guarantee a stable market with profitable export prices, in comparison with foreign monetary expenditures and internal expenditures for every unit of product.

Taking into consideration the raw materials available or those which can be assured in the country, the needs of the economy and the requirements of foreign markets, in the future, too, our chemical industry should be further developed and it should increase and assimilate production, with priority, given to satisfying the needs of the country and exporting the following items: sodium and sodium chloride, sulphuric acid and its derivates, simple and complex chemical fertilizers, chemical products used against pests, farmaceutical products and dyes, plastics and synthetic fibers, synthetic rubber and washing substances (detergents), pulp and paper, and the products of the sub-branches and other new chemical products.

3. Chemicalization, as a progressive phenomenon of the development of production forces and as an important link in the technical and scientific revolution, consists of the broad utilization of chemical methods for processing raw materials, developing new methods of production and perfecting the existing technological processes on the basis of successes achieved in chemical science.

Chemical industrialization makes it possible to intensify and accelerate technological processes and the use of new methods in production with great effectiveness. The economic importance of chemistry in production is always increasing, because the use of chemical methods and processes insures the putting into economic circulation of mineral and organic raw materials, with a low content of useful components, and their complex utilization, improving, at the same time, the technological and economic indicators of their use.

Thus, with the processing of coal in the chemical-coke plants, the level of its economic utilization increases in comparison with its use as energy combustible material. According to technological and economic calculations, it appears that about 75 percent of coking products, in weight, is made up of metallurgical coke and only about 25 percent is made up of sub-products (pure gas, tar, ammonia, benzol and so forth). However, the complex utilization of coking coal, by processing and rationally evaluating the coking by-products, makes it possible for their value to reach more than the half of the total value of the coking products.

The chemicalization of production has been developed in the petroleum extraction and processing industry, in the machine industry and the metal processing industry, in the wood working industry, in the enrichment of mineral ores, in ferrous metallurgy and non-ferrous metallurgy, in the textile industry and so forth. The opportunities exist to expand chemistry in production on a broad and wide scale, in other branches and processes, with a noticeable influence and effectiveness in the quantitative and qualitative indicators.

4. The chemical industry is one of the industrial branches which require large basic investments.

The earmarking of funds for machinery and technological equipment, for basic constructions and so forth is directly linked with the rational and effective utilisation of the accumulation fund for investments in the sphere of material production and with the anticipation and correct solution of the problems created in the export-import balance-sheet or the balance-sheet for technical and material supply from the country and from import.

The issue of investments and of their effectiveness in the chemical industry has been studied and we think that it must be studied in the future, too, starting: first, with the possibilities for expanding production capacities of the existing chemical industry through the elimination of "bottlenecks" in the chemical plants in use and through re-construction and modernization works; and second, with the necessity and opportunity to set up new projects, relying on our own forces both for planning and constructing and for producing machinery and technological equipment.

The correct solution of these tasks and the determining and concretization of the profile, of the dimensions, of the technology, and of the place and order of construction of chemical plants which will be expanded or which will be built, requires complex technical and economic studies, the deep knowledge of geological and industrial reserves of raw materials, the knowledge of the long-range needs for the economy, the possibilities and the advantage of export.

The increase of production capacities through expansion and re-construction works for eliminating "bottlenecks" in the chemical plants in use is an important field for the most effective use of basic investments for the development of the chemical industry.

In some chemical plants, in order to obtain the planned production capacities in their special units and sections, it happens that machines, aggregates or standard workshops, with greater capacities than the plant in general, are set up. Along with this, during the assimilation of production technology in the new plants, production capacities in the special sections and units are increased because of the implementation of technical innovations and of measures taken to perfect technique and technology in production. These two phenomena are domestic reserves and possibilities for increasing production with fewer investments. The development of the chemical industry on this path also influences the improvement of technical and economic indicators in the existing plants, the reduction of costs and the improvement of profitability in production.

Let us take the study for doubling the production capacities of the sodium plant in Vlore, as an example of expansion through elimination of bottlenecks. Here, the bicarbonate facility is the main unit. By increasing the main pieces of equipment of this line by about 50 percent, the capacity of production of calcined soda can be doubled. Investments for machines and pieces of equipment and for construction-assembly works in all units and lines of the plant for doubling its capacity are expected to be one fourth of the investments needed for building the existing plant. So, the specific investments for the capacity which is increased are about 25 percent of the specific investments (per production unit) of the existing plant; therefore, on the basis of this factor alone, the period for the recouping of investments for expansion is four times shorter than in the existing plant, without naming the other benefits from the improvement of technical and economic indicators for utilization. Investments in hard currency for machines, pieces of equipment and various materials needed for the expansion of the soda plant are recouped with profit in hard currency from the export of calcined soda within about 3 years, while domestic expenditures for one lek hard currency gained are at an acceptable level. The expansion of the soda plant with our own forces would influence the improvement of the effectiveness of production and the improvement of economic and financial indicators for this branch of industry.

5. The effective development of the chemical industry requires a high level of combining of production.

From the economic point of view, combining of production is presented in two forms: in the continuity of technological processing of raw materials up to the extraction of ready-made products and in the complex utilization of raw materials through the best utilization of by-products and through the processing and utilization of production wastes. Marx wrote that progress in the field of chemistry makes it possible for the wastes of the process of production and consumption to come back again in the cycle of production.

The elements of combining production are also seen in the chemical industry of our country. The industries of sodium, sulphuric acid, chemical fertilizers of nitrogen and so forth are characterized by a large volume of raw materials which are processed, as well as ready made products, by-products and wastes coming from the process of production. The useful utilization of wastes from the chemical industry, by separating and processing them for producing new by-products, or for using them as raw materials in the other branches of industry, is a very important problem which requires studies and correct technical-economic solutions, because, it helps to further improve the economic effectiveness of the chemical industry, to expand the base of raw materials and to protect the environment from pollution.

In the soda and polyvinyl chloride plants in Vlore alone, about 700 tons of raw materials and fuel are used every day; while the waste emerging from their processing, which so far have not been used, are calculated to amount to about 300 tons a day, as solid fuel or in solutions of various concentrates. To a great extent, these wastes are made up of calcium chloride, calcium carbonate, clay of mineral salt and cinders of coal which can be separated and processed in lines which can be set up near the soda plant or near other enterprises and, thus, they can be used as raw materials in the construction materials industry and in construction, as filling materials in the rubber and dye industries and as auxiliary materials in the preparation of solutions of clay for the drilling of petroleum wells and so forth.

Through the processing of sodium bicarbonate which is obtained as an intermediate product at the soda plant, it is possible to produce alimentary bicarbonate; while, a part of the original liquids, which could be extracted from the process of circulation, can be used for the enrichment of phosphorites. A large range of other chemical products could be produced on the basis of the processing of intermediate products, by-products and wastes from other chemical plants, and of by-products and wastes from the food industry, slaughter-houses and so forth.

The most effective direction of the combining of production in the chemical industry, as in any other branch, is combining for the complex utilization of raw materials. An example of this form of combining is the processing of coal at the coke-chemistry plant.

The coke-chemistry plant attached to the "Steel of the Party" metallurgical combine in Elbasan has been conceived mainly as an auxiliary unit of the combine for the production of coke needed for the blast furnaces. As a result, a total of 10 products are obtained from the coking coal, compared to about 100 obtained by other countries. From the by-products obtained at the combine from the coking coal gases and from tar, it is possible to obtain chemical products of great value for the dye industry, the pharmaceutical industry and so forth. For this purpose, it is necessary for the process of coking coal to have, as an objective, the rational and complex utilization of coking coal, both from import and from the country, by constructing lines and units for the separation and further processing of varied by-products from which it is possible to obtain technical benzol, toluol, xylol, sulphuric carbonate, naphtaline and pure phenol, sodium hyposulfite, and many other chemical products serving as raw materials for dyes and drugs.

In order to increase the level of the economic utilization of coal used in the coking process, it is necessary to study the necessity and the economic advantage deriving from the construction, in our country, of some new lines and workshops for the best and more complete processing of the coking coal gases so that some important components will be separated and recouped and that chemical products, valuable for the needs of our economy or for export, will be produced.

Another important example of the complex utilization of raw materials is the recouping of sulphuric gas from the copper casting plants in Rubik and Kukes, as it is executed at the pyrometallurgical plant in Lac.

Of course, the practical solving of the problems concerning the utilization of by-products and wastes from chemical plants (such as the soda plant, the superphosphate plant, the coke-chemical plant at the "Steel of the Party" metallurgical combine and others) is not an easy task; they require technical and economic studies, planning work, experiments and laboratory and semi-industrial tests.

6. The simultaneous development of the large and small chemical industry, as the effective way to put the raw materials of the country in economic circulation and to increase the volume of production and the number of chemical products.

On the basis of simple workshops and units that constitute the first embryos of our chemical industry, with the increase of production and the expansion of its range and with the passing from the artisan phase to the industrial phase with advanced technology and mechanized processes, with the passing of time, chemical enterprises, specializing in the production of chemical products for industry, agriculture and consumer goods, were organized.

With the creation of new branches and sub-branches of our industry and with the expansion of the nomenclature of industrial products, requirements for chemicals in assortments and in quantities were increased more and more. Thus, chemicals have been much in demand and still are, by the petroleum processing industry, by the plants for the processing of minerals, by the glass industry, the paper industry, the textile industry, the food industry and so forth, which use these chemicals as main and auxiliary materials and as reagents and catalyzers. Agriculture, the pharmaceutical industry and the chemical industry itself also need chemicals.

Despite the results achieved in insuring these chemical products by the chemical enterprises and through the intermediate products of the chemical fertilizer plants, the needs of the economy have not been satisfied and we have been obliged to import a great number of them. But, now, thanks to the development of the chemical industry and to the training of cadres in this branch, the conditions have been created for satisfying the needs of the country with a greater range of chemical products and for eliminating the import of chemical products as much as possible.

The basic chemical products, which serve as raw materials for the long-range production of chemicals, now have begun to be produced in the country. In cases where production capacities are not sufficient, now that the production technology of these products is known and we have a powerful machine industry, these capacities can be expanded with our own forces.

On the other hand, it must be stressed that the investments for the construction of other lines, units and sections of the small chemical industry are relatively small and can be implemented more easily and with shorter deadlines.

We believe that, in regard to the further development of the chemical industry, it is necessary to follow the road of setting up medium-size and large projects and the road of setting up simple technological lines and units for the production of chemicals which are produced in small quantities, but are necessary for the economy. These can be, for example, the production of chemicals used against the damages of agricultural crops (insecticides, fungicides, herbicides and so forth); the increase of the range of production of chemicals for the needs of industry, of the construction sector and of other branches of the economy; and the production of dyes for the textile industry or of drugs.

For the development of the small chemical industry, it would be appropriate to study and plan the setting up of some other chemical enterprises with lines, sectors and units with the specialty or with a similar specialty, for the production of chemical products different from those produced today or products which must be assimilated in the future.

From what we said above, it is possible to draw some main conclusions:

1. The chemical industry is a branch with great prospects for development. It participates in the heavy processing industry and is an important link for implementing the directives of the party aiming at converting the country to an agricultural-industrial country, at building the technical and material base of socialism, at improving the level of economic utilization of raw materials through their complex processing, at eliminating the import of chemical products and at increasing the volume of their exports, and at increasing national revenues and hard currency revenues.

2. The chemical industry, which has been created in our country, has proven itself, in general, as a branch with economic advantages and as a branch which produces for the needs of the country and for export. Its revenues are greater than the expenditures

for production. Its social product represents about 30 percent of the value of the production created in this branch. The investments for its expansion and development, both for the large projects and for those of small industry, are recouped within profitable deadlines.

Present studies have bolstered the opinion that the main and most profitable directions of the long-range development of the chemical industry are: the further increase of the production of sulphuric acid and of nitrogen products and, using these products as a base, the increase of production of chemical fertilizers; the increase of the production of sodium and chloride products, of chemical products against damagers of agricultural crops, of plastics, of pharmaceutical products and so forth; and the production of synthetic fibers, of synthetic rubber, of washing substances and of other products of organic synthesis.

Of course, for this aim, it would be necessary to increase the investment funds, as an absolute sum in relationship to the investments for the entire industry. It would be necessary to direct the investments for the chemical industry toward the establishment of large and small industry, and toward new projects, the expansion of existing production capacities, the elimination of "bottlenecks" and toward reconstruction and modernization work.

3. Just as until now, the development of the chemical industry will rely on and will be planned on the basis of the satisfaction, first of all, of the needs of the country; and on the basis of raw materials provided in the country.

4. With the level it has reached and with the conditions it has, we think that the development of the chemical industry in the future has the opportunity to be carried out based not only on the needs of the country, but also on the needs for exports, as an important source of revenues in hard currency, because the chemical industry creates the conditions for increasing the level of the complex processing of those raw materials which, in their natural situation, either cannot be exported or their export is difficult and unprofitable.

The analysis of the present development and of the possibilities and needs of our economy provides a number of data and elements so as to stipulate that the chemical industry will be among the branches which will develop on a priority basis and at rapid rates and that the specific weight of its production in the overall industrial production and the role and position of this branch in the general development of our socialist economy will be increased.

9150
CSO: 2100/70

PRODUCTION OF SYNTHETIC FIBERS IN COUNTRY DISCUSSED

Tirana PROBLEME EKONOMIKE in Albania No 3, Jul-Sep 80 pp 70-73

/Article by Moisi Kukeli: "Synthetic Fibers and the Problems of Their Production in the Country"/

/Text/ In connection with synthetic fibers, two basic problems are set forth before our socialist economy.

a) The utilization in a broad scale of synthetic fibers in the textile industry

b) and the possibility for producing these fibers in the country, along with the long-range development of the petrochemical industry.

In conformity with the development and expansion of the technical and scientific revolution, in accordance with the great principle of our party--the principle of relying on one's own forces--progress has been made and the production of textiles, composed of synthetic fibers, is being expanded more and more. Now, with the development of the production and processing of raw materials, such as by-products from the deep processing of petroleum, gas and coke-chemical products, premises have also been created for the production of synthetic fibers in the country.

At the present time, the production of synthetic fibers is undergoing extensive development. In 1976, synthetic fibers made up 35 percent of the world production of all natural and chemical textile fibers. This means that production of synthetic fibers is approaching the level of production of natural fibers and, it is expected, that in 1980 it will be up to the level of cotton fibers. According to prognoses for the year 2,000, synthetic fibers will make up the two-thirds of the world production of textile fibers. Synthetic fibers, according to their main groups, in 1975, were made up of polyesters, 46.1 percent; polyamides, 33.3 percent; polyacrylonitriles, 19.1 percent; and other groups, 1.5 percent. From this comes the idea of the uninterrupted development of synthetic fibers in general and of polyester fibers in particular. The polyester fibers group increased by 7.5 times compared to 1965, and two times compared to 1970. The polyacrylonitrile fibers are being increased more and more, while the first traditional synthetic fibers are continuously being reduced. The rapid increase in the production and utilization of synthetic fibers, compared to other textile fibers, is explained by some factors.

First, the synthetic fibers, because of their sources, depend completely on the extraction and processing capacity of the coal industry and, especially of petroleum and gas.

Second, natural fibers are scarce, because their production is limited in space (geographic area) and in time (biological cycle).

Third, artificial fibers, beside the insufficient supply of pulp raw materials, have limited qualitative characteristics, therefore, their production stays at the same level.

Fourth, while, natural fibers have proper characteristics which cannot be changed, synthetic fibers, through the modification of the length of polymer chains, of the chemical nature of the links which composed them, and of the level of crystallization and so forth, can be suitable for every type of need and for the most diverse variants of quality, assortments and appearance.

Fifth, for the production of synthetic fibers investments are about 30 percent less and 10 times less work is expended, compared to the production of natural fibers. On the other hand, per unit of weight, about 15 percent more products are realized with synthetic fibers than with natural fibers.

The production rates for synthetic fibers are high and their economic advantage is great, compared to natural fibers. For the production of synthetic fibers, base raw material sources constitute less than one percent of the world supply of petroleum. Synthetic fibers, especially, polyester and polyacrylonitrile fibers, will also maintain and strengthen their positions in the future, even in the manufacture of another new polymer will not change the situation at all, because with the process of producing the new fibers and putting them into wide use it would be a long time before the existing types of synthetic fibers are replaced.

On the basis of these general considerations, the problems linked with the production of synthetic fibers in our country are presented in two aspects: which of the synthetic fibers are the most necessary and with more prospects for the economy of our country, and how can the country's needs for basic materials, relying on the selected type of fibers, be met?

The use of synthetic fibers in our textile industry today covers relatively small quantities, which reach some hundreds of tons, as follows: polyesters, 50 percent; polyamides, 33 percent; and polyacrylonitriles, 7 percent. Based on prognoses, until 1990, the needs for textiles and, consequently, for fiber raw materials, increase in a noticeable manner. The use of polyester and polyacrylonitrile fibers, in blends with wool and cotton, not only gives textiles better processing utilization and appearance, but also, replaces the scarce natural fibers.

Both on the basis of the dynamics of the present and future utilization of synthetic fibers in our country and of their production and utilization at world level, the general idea is that polyester and polyacrylonitrile fibers constitute the most massive and most necessary groups in the production of textiles. In contrast to all textile fibers, polyester fibers give great comfort (relaxation) and have an extraordinary resistance to creasing, good resistance to rubbing (abrasion) and a great initial strength in stretching while, polyacrylonitrile fibers, because of their morphological nature, are good substitutes for wool and have higher resistance to sun rays.

The base materials for the production of synthetic polymers for fibers are the by-products of the deep processing of petroleum and of olefins (ethylene, propylene and so forth), and the aromatics (benzene, toluene, xylene and so forth). With these by-products, depending on the processes of syntheses, it is possible to produce polyesters, polyacrylonitrile and polyamides and so forth. While the use of petroleum derivatives for the syntheses of various chemical products has a very large nomenclature for many different purposes, 90 percent of the base materials of polymers for fibers are properly utilized only for one type of fiber.

As a general conclusion, we can state that, in regard to the conditions of our country, the production of polyester and polyacrylonitrile fibers, for which the necessary raw materials are provided by the country and the long-range needs for new fibers for our textile industry are satisfied which will radically improve the structure, quality and longevity of textile products both for the country and for export.

In connection with the problems dealing with the production of polyester and polyacrylonitrile fibers in the country, the following conclusions and recommendations emerge: to meet the needs for base materials for the synthesis of polyesters and polyacrylonitriles destined for textile fibers, the following would be used: the acromatic hydrocarbons produced in Ballsh; the benzene produced at the "Steel of the Party" metallurgical combine in Elbasan; the olefin hydrocarbons resulting from gas products catalytic of the cracking and coking plant in Ballsh; the hydro-cleaned and deodorized gasoline which will be subjected to steam cracking.

On the basis of the assurance of these sources of raw materials and the long-range needs of the textile industry for synthetic fibers, it would be suitable to set up a petrochemical complex composed of two special technological lines for the synthesis and sorting out of polyester and polyacrylonitrile fibers, with a production capacity of 5,000 tons a year each.

For satisfying the needs for textile articles for various uses in the country and for export, the structure of sorting out of fibers will be as follows: for polyester fibers: cotton types (for clothes); wool types (for fabrics); textile fibers (for knitwear); and uncut fibers (for lining, drapes, decorative articles, technical articles and so forth).

For polyacrylonitrile fibers: woolen type (for knitwear, clothes and rugs), and cotton type (for clothes and blankets).

For designing and constructing the petrochemical complex for the synthesis of polyester components (terphthalic acid and ethylene oxide) and of the acrylonitrile monomer, the following problems emerge: as the production capacities of two lines are small and below the limits of the standards capacities of world level, original engineering and economic solutions and designs of these new lines are required.

For our country, the setting up of lines with greater production capacities is conditioned by the sources of raw materials and by the possibilities for handling the processing of greater contingents of synthetic fibers by our textile industry along with its long-range expansion.

In regard to polymerization and sorting of fibers, technical possibilities exist for small units within the limits of proposed capacities, without any noticeable effect on costs per unit of production.

With the assurance of the production of polyester and polyacrylonitrile fibers in the country by the setting up of a petrochemical complex, new and more rational sources of raw materials will be created for our textile industry which, on the basis of always increasing demands of the economy for things of broad utilization, will be further developed during the coming five-year plan. With the expansion of the utilization of these synthetic fibers, in examining and executing the very great and important tasks assigned by the Eighth Plenum of the Party Central Committee for research and scientific work, in addition to a better utilization of existing production capacities of the knitwear and textile combine, it would be necessary to create new production areas with modern technology for technological lines for the cotton-polyester and polyacrylonitrile textiles and the wool-polyester and polyacrylonitrile textiles combined with new lines and links of apparatuses, machines and aggregates for the periodic and continuing processes of dyeing and finishing.

The production of polyester and polyacrylonitrile fibers in the country sets forth before the workers and specialists of the industry for the deep processing of petroleum, of the chemical industry and the textile industry the solution of a number of new and difficult technical, scientific and economic problems. In order to solve these problems, studies, research work, and design activity must be further expanded, with the coordination and concentration of the forces of the enterprises, research and design institutes and government departments.

9150
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ROLE OF COAL, NEEDS, SUPPLIES IN CSSR DISCUSSED

Prague HOSPODARSKE NOVINY in Czech 17 Apr 81 p 3

[Article by Miroslav F. Kessler, CSc., Geological and Geotechnical Institute of the CSAV (Czechoslovak Academy of Sciences), Prague]

[Text] Ideas such as that "coal is too valuable to burn," or "coal should be used as feedstock for chemical processing" and others calling for the rational utilization of this resource were heard as far back as 30 years ago. Such ideas are equally inaccurate as the claims that "coal is exclusively a primary resource for generating heat and power and is not a chemical feedstock." This is so because the designation "coal" identifies a wide variety of fuels of very different characteristics. Eng Josef Farka, deputy minister of fuels and power, confirmed this view recently (in HN No 8/81) when he said that "we have not fully succeeded in producing the planned fuel types, especially the desired assortments of coal suitable for coking and for coke production in metallurgical ovens."

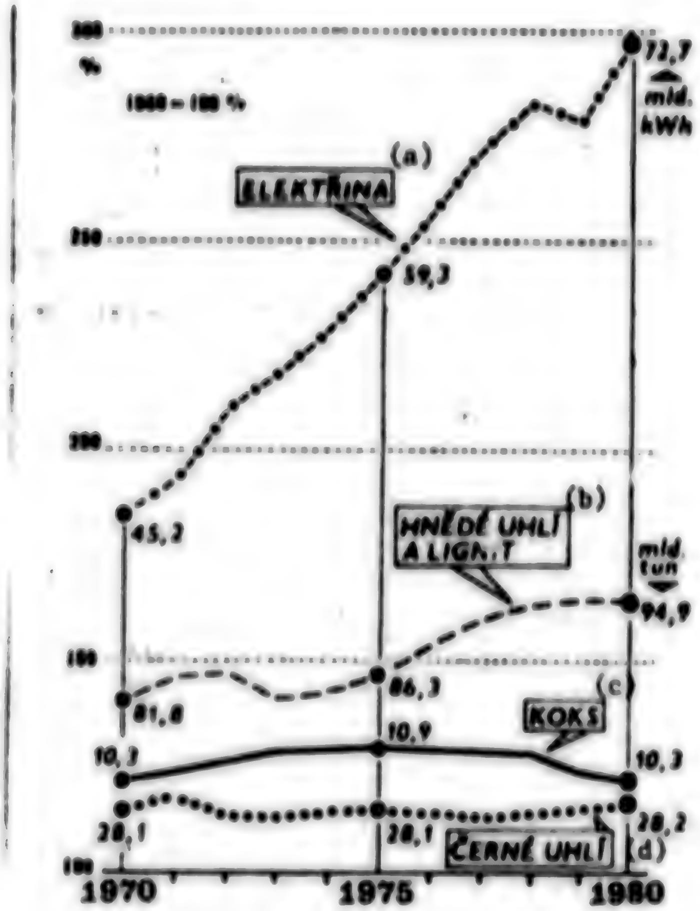
These are problems arising from differences of characteristics of coal deposits in individual coal fields and differences of characteristics of different types of black coal classified as chemical feedstock. The production of coke and its byproducts will become vitally important in the future. Coal composition (not secondary components) can markedly affect the economic use of black coal.

Since 1973, coal has gained in importance also because the forecasts about the consumption of world energy resources have undergone a number of corrections including, the final estimates of coal consumption in the year 2000 which range from 36 billion tons to 20 billion TMP [tons of standard fuel]. In 1977, world coal consumption was 9.5 billion TMP.

In view of the declining supplies in the future and rising prices of crude oil, coal will again become the principal raw material not only for power production but also for thermochemical processing (coke, tar, gas, organic chemicals) and the developmental processes designed to replace oil for certain purposes (such as hydrogenation for the production of liquid hydrocarbons). And, of course, production of chemicals from coke already constitutes one of the largest chemical production sectors.

In the future, the characteristics of existing coal deposits will become vitally important. Among our coal reserves, black coal is of special importance and, therefore, its rational utilization should be of lasting concern to our mining and fuel specialists.

Mining--Fuel and Power Production



Key:

- a. Electric power
- b. Brown coal and lignite
- c. Coke
- d. Black coal

This postulate calls for using black coal deposits:

--primarily as a chemical feedstock for thermochemical processing (chamber coking) to the maximum extent where the quality of available deposits constitutes the only limiting factor;

--as a natural smokeless fuel equivalent to high-grade fuels (coke, gas, heating oil);

--as a primary fuel for the production of steam and power where this is absolutely necessary;

--as a feedstock for the production of liquid hydrocarbons, organic oxygenated compounds and absorbents.

Feedstock for the Thermochemical Process

The thermochemical process is the most efficient way of utilizing black coal. This method yields a number of very valuable substances by a process which is self-sustaining. In principle, all black coal suitable for the chamber production of lump fuel coke should be processed thermochemically. Coke is a basic metallurgical raw material--as we are aware today; as an export commodity coke is more advantageous than coking coal; coke can also be used as a high-grade fuel for residential heating without detrimental effects to the environment which is also economical from the transportation viewpoint. Tar is a starting raw material for a number of chemical products including coal tar pitch, which in turn is a valuable raw material, for example, for the production of anodes, graphite electrodes, etc. Sulfur-free coal tar pitch or semicoke is one of the most valuable raw materials. Gas can be used as high-grade fuel for improving the caloric value of natural gas or as a source of hydrogen for other processes such as the production of fertilizer-grade ammonia.

Today in our country only the deposits of the Ostrava Karvina coal basin meet the quality requirements for thermochemical processing. But it is specifically these deposits which exhibit a variability of quality encountered nowhere else in the world. This confronts us with the dilemma of whether to take the variability into account or to ignore it. It appears that the first alternative will prevail. Preparing high-quality coking burdens calls for choosing coal seams on the basis of quality of the coal according to a plan which specifies the quantities of coal types required. In some aspects, the coal from Ostrava coal seams possesses unique characteristics which would be degraded if mixed with other coal of inferior quality. Therefore, optimum utilization of the coal is closely connected with the organization of mining. Consequently, planning coal mining on the basis of quality is the only way of exploiting rationally the deposits of the Ostrava-Karvina coal fields and extending their usefulness as a source of raw material for the metallurgical industry. At the same time, this procedure also makes it possible to use lower quality coal for the production of metallurgical coke whose proportion in the burden, however, must be limited if the quality of the metallurgical coke is to remain unimpaired, which is the first consideration.

Coking coal with combustible matter containing in excess of 28 percent volatile substances can be used rationally both as an additive to charges in the production of metallurgical coke and as one component of mixtures used to produce heating coke as demonstrated in the Kladno basin last year. Carbonization presents another opportunity of broadening the exploitation of Kladno coal deposits. In addition, the Slany-Rakovnik basin yields coal suitable at the least for the production of heating coke which would eliminate the need to import coking coal from the OKR [Ostrava-Karvina coal basin] to Kladno and would alleviate railroad transportation.

On a world scale there is a shortage of coking coal. The envisioned 1985 consumption of 880 million tons is expected to fall short by 100 million tons. Between 1975 and 1985 coke consumption will rise by an average of 3 percent a year.

But until the year 2000 it will not be possible to enlarge coal carbonization capacity in the CSSR adequately in spite of the vast reconstruction work on coke oven batteries proceeding at the NHKG [New Metallurgical Works of Klement Gottwald], VSZ [East Slovakia Iron Works], TZ VRSR [Trinec Iron Works of the Great October Socialist Revolution] and at the new OKR coking enterprises; this reconstruction work mostly only replaces obsolete coke ovens.

Stabilizing the production of this type of coal is the correct policy to follow on condition that coal quality, i.e., the mixture of the different coal types needed to prepare charges suitable for the production of blast furnace coke will be available.

Solving the problem of optimizing the composition of charges for individual, especially metallurgical coking installations, by meeting the necessary quality criteria, i.e., the required content of combustible matter and the thermoplastic properties (i.e., cokability) is especially urgent. This is predicted on the necessary preparation and dressing of charges, i.e., on improving the processing of coal in coking plants and on the continued construction of the capacities necessary for the production of the different types of coal required.

Preparing the types of coal needed for coke is predicated on planned mining of necessary commercial types of coal. But the range of quality indicators of individual commercial coal types is so broad that they do not guarantee the attainment of the desired coke quality and even less uniformity of quality vital for use in blast furnaces. Proportioning of individual coal types is unthinkable without automation, doing it empirically is unsatisfactory. The technological standard in coking plants needs to be raised by all available means, such as by implementation of new scientific findings, technological improvements and by improving quality control of coal deliveries, the preparation of the coal mixture and of the thermal coking process.

Black Coal as an Energy Resource

Even though the CSSR coal deposits do not include anthracite, the lower strata of the Ostrava coal deposits are highly coalified and meet the quality criteria of smokeless fuel (the Vitezny February Mine, the J. Sverma Mine, etc.). Uncokable coal is not required for preparing coking charges and can be placed on the market as smokeless fuel. In this way, such coal can meet environmental standards placed on fuel used in urban areas without the need of additional investments, fulfilling thereby one of the tasks assigned by the 15th CPCZ Congress. This coal could suitably supplement the supply of heating coke which is not always available in needed quantities. To that end, an inventory should be taken of the reserves of the Ostrava coal deposits to make it possible to arrange technical and organizational conditions providing for the mining of the required types of coal and for setting corresponding price incentives (wholesale prices).

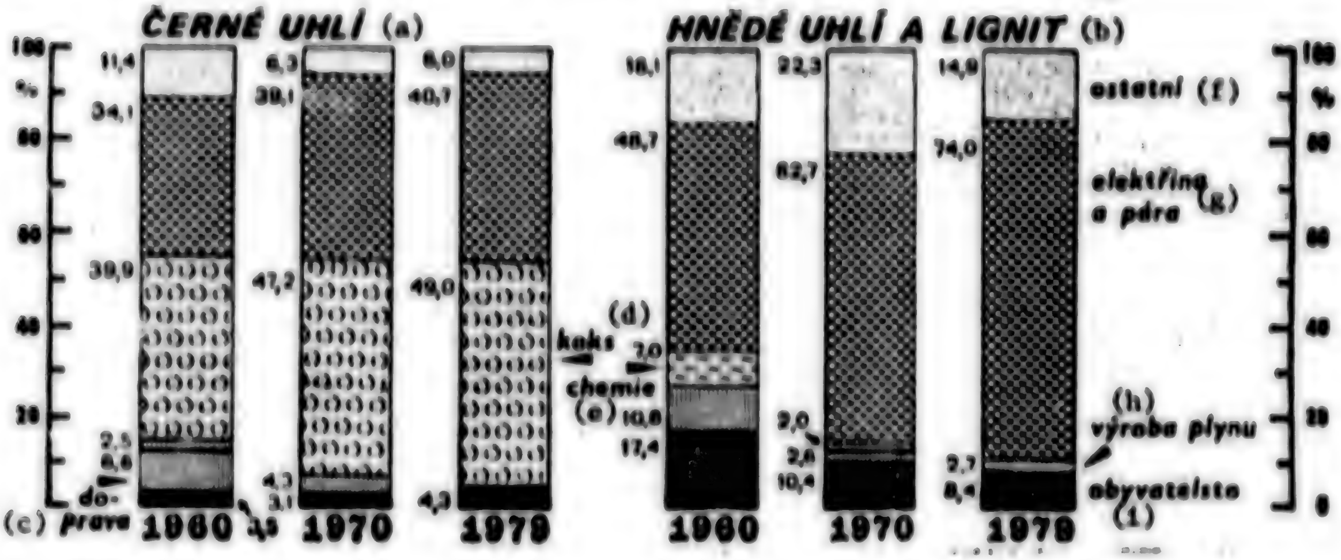
The proportion of black coal used for power production in 1979 constituted 21.8 percent of domestic black coal production and imports. With that, black coal consumption by the population was only 4.3 percent even though black coal is better suited for home heating. Supplies from all our coal basins excepting the OKR should be used for power production and as steam coal. Using OKR coal for power production should be limited to cases which for technical and economic reasons are necessary and especially advantageous. The selection of coal for the production of power must be limited to coal unsuitable for coking. Waste from coal washing should also be utilized in fluid bed combustion.

Providing the optimum coal quality structure for use in thermal power plants must become an object of study within the entire fuel and energy complex. Such a study should address all important aspects including transportation, environmental protection and the principles of rational consumption of coal as an energy resource. This was also stressed by Deputy Minister Farka when he set "the evaluation of all forms of fuels and energy with respect to their end use" as an objective of prime importance and a lasting political and economic task.

The consumption of black coal which is being met by more than 85 percent from the OKR constitutes currently and for the future our most precious raw material. The daily consumption of black coal for chemical processing, i.e., for the production of coke, coal tar and gas is 49 percent (see diagrams). This proportion should be raised further because of increasing economic difficulties in procuring oil and certain exports of coke. Until 1969, approximately 4 million tons of brown coal a year were processed chemically to coal tar and by subsequent hydrogenation to fuels; this production was classified statistically as "chemical processing" while carbonization of black coal was classified as "use for coke production." Carbonization of black coal constitutes now and for the future the most efficient technological coal-processing method. Carbonization has regained the economic importance it enjoyed in the fifties--before crude oil took over--at a time when coal tar was an important chemical feedstock and when gas was a high-grade fuel used for residential heating.

The new market situation governing the procurement of high-grade fuel, especially for our historical urban areas, has raised the importance of high-grade smokeless solid fuel. The systematic determination of the quality of the OKR coal reserves revealed that their lower strata contain highly coalified deposits (with under 16 percent volatile combustible matter) which fully meet the criteria of smokeless fuel and can replace heating coke or anthracite. In the coming 10 years, special emphasis should be placed on exploiting these deposits for residential heating purposes before heating coke becomes available in required quantities. Increasing the market supply of black coal unsuitable for coking and of natural smokeless coal from the OKR would represent a more rational utilization of our coal deposits, raise the living standard of a considerable part of our population and improve air quality in our cities. It must also be born in mind that by heat content 1 kilogram of smokeless coal is equivalent to 3 kilograms of brown coal which constitutes a load difference important also to our railway transportation.

Coal Consumption Structure (in percent)



Key:

a. Black coal
b. Brown coal and lignite
c. Transportation
d. Coke
e. Chemical processing
f. Other
g. Electric power and steam
h. Gas production
i. Population

8664
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AGRICULTURAL TRENDS FOR 1981-1985 DESCRIBED

Developments After 16th CPCZ Congress

Prague MECHANIZACE ZEMEDELSTVI in Czech No 4, Apr 81 pp 135-137

[Article by Eng Miroslav Toman, deputy chairman, State Planning Commission, Prague: "Development of Czechoslovak Agriculture after the 16th CPCZ Congress"]

[Text] At present, while the working people in our country are consistent in their endeavor to fulfill their tasks for the current year, central organs are proceeding from an analysis of the results achieved in the Sixth Five-Year Plan in their work on a draft of main directives for the Seventh Five-Year Plan.

In the past period, the development of our agriculture and food production advanced further, which helped markedly improve the quality of our nutrition. The steadily expanding participation of every branch of our national economy in food production demands that the development in that sector be directed within the entire national economic agroindustrial complex with determination. This urgent demand stems from the fact that the share of workers in agricultural production amounted to 75 percent in 1948, while today it represents approximately 30 percent with 70 percent contribution of labor from other branches of our national economy.

Material contributions, introduction of scientific technological advances and the attained level of concentration, specialization and integration have provided a whole complex of conditions for the growth of intensity in agricultural production and for comprehensive improvement of productivity in food production.

In the Sixth Five-Year Plan, capital assets in our agriculture and food industry amounted to Kcs 268 billion, which represents a 46 percent increase over the Fifth Five-Year Plan, of which machinery capital assets amounted to Kcs 85 billion and their increase of 62 percent. Our agriculture obtained 39,740 tractors, 7,840 combine harvesters for grain crops, 1,500 beet root harvesters (3-6 row models) and 1,350 beet leaf harvesters, 2,620 automatic harvesting fodder choppers, 12,200 manure spreaders and additional efficient machinery for plant and livestock.

The area of drained and irrigated land amounted to 1.62 million hectares, which is 23.5 percent of the total acreage of agricultural land. The volume of fertilizers delivered in 1980 amounted to 1.76 million tons of pure nutrients; in other words, during the Sixth Five-Year Plan it increased 9.6 percent, nitrogen fertilizers accounting for 34 percent and phosphorous fertilizers 10.6 percent of that. In the good industry, 35 new large-capacity plants began operating and numerous plants were rebuilt.

Agricultural production increased 9 percent; average annual grain harvest amounted to 10.1 million tons, which is 7.8 percent more than in the Fifth Five-Year Plan. The production of oleiferous crops was up 46.8 percent, hops 16.4 percent, sugar beets 3 percent, and fodder crops 4.5 percent. The production of slaughter livestock increased 15.5 percent, slaughter poultry 30 percent, milk 6.5 percent, and eggs 2.4 percent.

The volume of gross production in our food industry increased during the Sixth Five-Year Plan from Kcs 84.5 billion to Kcs 97.1 billion, i.e., 14.9 percent. With comparable prices of deliveries from our food industry, consumer goods inventory increased 13 percent, or 10.5 percent per citizen. In projection to adjusted prices, the supplies from our food industry to consumer goods inventory were up 16.9 percent.

Thus, in per citizen consumption of food--meat (85.4 kg), milk and milk products (228 kg), eggs (312 eggs) as well as other products--we attained a level in which we rank among the foremost in the world.

During the coming period, we shall strive above all to maintain the achieved level of consumption and to improve primarily the selection of food products, particularly fruits and vegetables, so that the Seventh Five-Year Plan will effectively launch and intensify the development of our agriculture and food production along with the effort to improve the relative proportions between the development of plant and livestock production. This calls in essence for more realistic relations between the potential for our food production and food consumption.

The plans and the management of our entire national economic agroindustrial complex call for a dramatic increase of responsibility in every branch participating in food production. It is imperative to achieve more proportional and balanced supplies of all means of production, to improve their technological standard, organization of operations, productivity and effeciency and to increase the intensity and productivity of labor in our agriculture and food industry. A solid production base of modern socialist mass production in our agriculture and food industry, both in completed projects and in projects under construction, requires a higher degree of exploitation, reduction of all waste and utilization of reserves in processes of production so as to expand the sources of food and overall efficiency of their production.

Our agriculture must continue comprehensive intensification of individual sectors of production and develop the required selection of all products for which suitable natural conditions exist in our country. Our state and cooperative agricultural enterprises must be consistent in introducing the achievements attested by scientific research and the experience gained by our foremost enterprises in the system of management, which guarantee high, constantly growing intensity of production, efficient exploitation of the soil, of the means of production and of financial and labor assets. Moreoever, measures to strengthen khozraschet in socialist enterprises and to improve our financial economic situation must be enforced and implemented.

The first priority in the plan and in its implementation is the preferred growth of plant production above livestock production, with concurrent accumulation of reserves to hedge fluctuations in production. Furthermore, agricultural production must be deployed to the best advantage, the potential for production must be exploited most efficiently, and specialization and concentration of products must be consistently enforced. It is imperative to strengthen the role and responsibility of all organs in agricultural management up to the level of enterprises as well as of all suppliers of means of production and services in establishing dependable sources of food and raw material funds for their production.

During the Seventh Five-Year Plan the average annual standard of values in our agricultural production must be raised by about 9 to 19 percent above the level envisaged for the Sixth Five-Year Plan, 14-16 percent in plant production and 6 percent in livestock production.

The foremost task in plant production involves more consistent protection of the soil fund, comprehensive improvement of fertility of all agricultural land, achievement of higher yields and higher stability of all crops, higher quality of utility values of agricultural products, elimination of waste in processes of production, better storage, better planning for next stages of production and more thorough exploitation and utilization of agricultural products.

One of the most important tasks is to harvest annually an average of 11 to 11.2 million tons of grain crops, which represents a 9 to 11 percent increase over the Sixth Five-Year Plan. High average annual harvest calls for markedly increased yields of grain crops in good years in order to stockpile reserves as a hedge against the possibility of less abundant harvests.

Our priority task involves a comprehensive plan for the production of top-quality bulk fodder. We must raise annually an average of 1.7 million tons of fodder crops (in conversion to hay) above the Sixth Five-Year Plan and achieve a total volume of 15.5 million tons in 1985 by increasing the shares of multiannual fodder crops, their yield, the share of intermediate crops and fodder root crops and by rotating meadows and pastures.

This calls for highly productive seed for sowing, efficient mechanization, including technology suitable for hillside areas, guaranteed investment in energy-conserving methods, hay storage, ensilage and hay processing. Agricultural enterprises will build bulk fodder processing plants for the necessary technological treatment, operate all categories of cattle farming scientifically, use bulk fodders more economically and improve them.

Production and procurement of fruits and vegetables must be considerably increased in order to attain a higher standard of rational nutrition. It is envisaged that the production of vegetables will increase 20 to 25 percent and procurement of fruits 35 to 40 percent. For that purpose, the potential of small consumers must be utilized and procurement for market and for production must be better organized.

A comprehensive solution also depends on higher production of technological crops. Production and procurement of oleiferous crops will be up 60 percent over the Sixth Five-Year Plan because of expanded acreage and increased yields. The stagnating cultivation of sugar beets must be reversed and an average of 8.2 million tons must be harvested annually, which means a 15.5 percent increase; at the same time, the problem of higher sugar contents must be rationally resolved. The production and procurement of hops will increase 22 percent and their quality and stability will be improved.

Programs of propagating and seed-producing organizations will be upgraded so as to develop new, high-yielding hybrids with new, advantageous characteristics. New hybrids as well as scientifically warranted agrotechnology will be introduced in general operations.

Our basic task in livestock production involves a change in structure and an increment in production, 75 to 80 percent of which from the products of cattle farming. Procurement of slaughter animals for the needs of state funds will be increased before 1985 by 4 percent (60,000 to 70,000 tons of live weight) over 1980, practically all from slaughter cattle. Procurement of milk will increase 8.2 percent (425 million liters).

Higher production of slaughter hogs and slaughter poultry as well as conservation of fodder per unit of production will be encouraged; production in enterprises with progressively lower per unit fodder consumption will be expanded and less economic production curtailed. Procurement of eggs will increase 11 percent (290 million eggs) to satisfy the growing needs of our consumer goods inventory and consumption in production, and in particular, to compensate for lower natural consumption.

Indicators of quality in the process of replacement will be enforced more emphatically in the management of production processes, especially in order to conserve the highest amount of grain fodder, to improve the care of young animals and to eliminate all waste which impairs final production results and financial management.

Before 1985, our food industry will increase its production 11.6 percent over the level projected for 1980, and the deliveries to consumer goods inventory in retail prices will increase 13.6 percent, or 10 percent per citizen. The principal task in every sector is to achieve a high standard in processing of all raw materials, including wastes and by products.

Sectors of our food industry should focus on distinctly improving the quality of the structure of production, on innovation of products, higher standards of processing, and a better selection of convenience foods. It is important to improve the nutritional value of foods by enriching them with proteins, vitamins and other wholesome components, to improve durability of food products, to expand the line of prepacked products, and to continuously upgrade the packaging of consumer products. The quality of baby and infant foods will be improved and their line expanded. The consumption of sugar in the production of nonalcoholic beverages and other products containing sugar will be cut because of its excessive consumption per capital.

Our food industry will increase its production and markedly improve the quality of food products in general by upgrading technical standards, introducing better technology and organization of labor and essentially by improving overall labor productivity.

Every branch involved increasingly more in food production as a part of the agroindustrial complex needs a more efficient, imaginative and responsible approach. Achievements in the fulfillment of their tasks in social production must be assessed in individual branches and sectors more rigorously in the future in accordance with their actual contribution to comprehensively improved productivity and quality of food production. Appropriate branches must accept full responsibility for the volume, structure, operational and production efficiency of their means of production as well as for scientific technological development and continuous improvement of their means of production, including those imported in the gesce of the branch in question.

The material base of food production must be steadily raised to a higher technological and economic level. In addition, the branches of our agrocomplex must accumulate slightly higher investment funds than in the Sixth Five-Year Plan to total Kcs 105.3 billion, of which Kcs 52.4 billion is for machinery and equipment. The already available broad base of production capacities must be better utilized. Investments will be concentrated so as to enhance final intensity mainly in plant production; our food industry must focus on the most profitable processing of raw materials and expand the capacity of the sectors oriented toward better nutrition.

As concerns essential machinery, 33,300 tractors, 10,000 farm trucks, 7,000 plows, 7,000 combine harvesters, 6,000 of which will be E-512 and E-516 models, 1,670 potato harvesters (2-4 row models), 1,300 beet leaf and root harvesters (3-6 row models) and other machinery for plant and livestock production and agricultural transport will be delivered in the course of the Seventh Five-Year Plan. Our food industry calls for the delivery of machinery and technological equipment valued at Kcs 13.6 billion, which represents 66 percent of the total investment volume.

For better plant nutrition, deliveries of fertilizers will be raised 12 percent, of which nitrogen fertilizers 21 percent and phosphate fertilizer 14 percent. Supplies will amount to 287 kg of pure nutrients per hectare of agricultural land. Domestic manure must be used far more extensively than thus far and losses of every nutrient must be reduced. Supplies of chemical preservatives will be raised 19 percent, of dicalcium phosphate for the production of fodder mixes 18 percent, and of L-lysine 38 percent. Sources of protein components in protein contents, including domestic agricultural production, must be increased 10 percent.

Supplier branches must satisfy additional requirements so as to prevent waste and achieve smooth progress in production, particularly of spare parts, materials for repairs, packaging, small-tonnage products, and other needs.

Production services will be developed and improved, particularly in agrotechnical enterprises, by introduction of scientific nutrition and protection of vegetation and of all agrotechnology; machine and tractor stations will reach a higher technological level in modernization of agriculture production, and the ZZN [Agricultural Supply and Procurement] organizations will produce more efficiently a larger volume of industrial fertilizers of guaranteed quality.

The Seventh Five-Year Plan will assign new tasks to our agriculture and food industry and demand better quality. For that purpose, it is necessary to change the current approach in the management of agriculture and the entire national economic complex of production and food consumption as well as in economic tools and workers' material incentives. At the same time, this objective requires a more determined conceptual approach, initiative, persistence and dedicated work by every worker in order to establish well planned mass production systems, to acquire scientific and practical knowledge, to increase intensity as well as efficiency of food production.

Tasks in Livestock Production

Prague NAS CHOV in Slovak No 3, Mar 81 pp 89-90, 105

[Article by Dr Ladislav Balla, CPCZ Central Committee: "Facing Demanding Tasks in Livestock Production in the Seventh Five-Year Plan"]

[Text] In the beginning of April, the 16th CPCZ Congress will convene to assess, among other things, the fulfillment of the tasks related to our party's agricultural policy as stipulated by the 15th Congress. Despite the bad weather over the past 2 or 3 years, our agricultural workers advanced further than in previous five-year plans in the fulfillment of the strategic tasks aimed at increasing our self-sufficiency.

In view of the above-mentioned unfavorable weather conditions we regard the achievements of the Sixth Five-Year Plan as positive, although in most indicators they fell short of the directives. We shall present a brief outline of the fulfillment of certain important indicators. As compared with the Fifth Five-Year Plan, gross agricultural production increased 9 percent during the Sixth Five-Year Plan but remained 4.8 percent below the stipulations of the plan. The overall fulfillment of the plan for gross agricultural production was affected to a major extent (82.8 percent) by a considerable shortfall in plant production amounting to as much as Kcs 16.9 percent [sic] billion. Instead of the planned 16.8 percent increment, its volume in 1976-1980 has risen only 6.7 percent over the Fifth Five-Year Plan. Grain and fodder crops, sugar beets, potatoes and fruit crops contributed to a great extent to the shortfall in our plant production.

The situation in our livestock production developed more favorably because the total volume of gross livestock production increased 11 percent in 1976-1980 over the preceding five-year period. Nevertheless, the five-year plan fell short by 1.5 percent. The shortfall in slaughter animals amounted to 269,000 tons of live weight and in milk to 523 million liters. On the other hand, 72,000 tons of live weight of slaugher poultry and 192 million eggs were procured above the plan. We regard it as a negative phenomenon that the grade composition in meat procurement failed to meet the target of the Sixth Five-Year Plan. The procurement of slaughter hogs was exceeded by 64,000 tons (directives 101.5 percent fulfilled), while the procurement of slaugher cattle fell short by 304,000 tons.

Table 1, which represents the development in the procurement of main animal products, demonstrates best the marked growth rate of individual commodities. Thus, we were able to supply the market with sufficient amounts of animal products and to improve the high Czechoslovak standard of per citizen consumption of foods of animal origin. We wish to stress that in view of the increasingly more complex development of the economic and political situation in the world, our success is far from neglible.

Table 1. Development in the Procurement of Main Animal Products

Indicator	1970	Average for 1971-1975	1975	1980	Average for 1976-1980
Slaughter livestock (in thousand tons)	1,071	1,276	1,415	1,595	1,516
Slaughter poultry (in thousand tons)	117	153	178	240	220
Milk (in million liters)	3,705	4,314	4,570	5,160	4,861
Eggs (in million pieces)	1,832	2,166	2,312	2,640	2,467

In his report to the 18th Plenum of the CPCZ Central Committee, Comrade L. Strougal underscored that in the Sixth Five-Year Plan the develpment of our plant production on the whole had lagged behind the needs of livestock production. He characterized this as the most significant shortcoming and the weakest point in the fulfillment of the Sixth Five-Year Plan. In fact, this nonfulfillment of one of the basic directives stipulated by the 15th CPCZ Congress and by the 13th Plenum of the CPCZ Central Committee had generated many serious consequences.

The achievements in our plant production over the past five-year plan have confirmed that this branch remains a weak link in our agricultural production. It aggravated the stress in fodder balances, forced us to take some measures that are unpopular from the viewpoint of national economy, such as, for instance, reduced exports, increased imports, etc.

We reveal no new secrets if we repeat the centuries-old truth that livestock production cannot prosper without solid plant production and vice versa. For that reason, we must analyze most critically the causes of backsliding in our plant production on every level and to implement the decision of the 13th Plenum of the CPCZ Central Committee more thoroughly than thus far.

A single article cannot fully exhaust all the complex problems of our livestock production; therefore, we shall concentrate on some timely questions not only as regards the Ministry of Agriculture but our entire society. What is needed most is accelerated implementation of structural changes in livestock production and in the problems of management and fodder utilization which are narrowly connected with that program.

As known, the 18th Plenum of the CPCZ Central Committee remephasized the demand that the structure of livestock production be subordinated to the necessity of improving our self-sufficiency in plant production, particularly in relation to the restrictions of fodder imports. Extensive imports of grain fodder during the Fifth and Sixth Five-Year Plans cannot be repeated in the Seventh Five-Year Plan. Therefore, livestock production is focused precisely on those types of livestock that do not consume large amounts of grain fodder, such as beef cattle, sheep, etc.

In view of the level in the development of our plant production and our realistic outlooks for the production and import of fodder, the rate of growth in our livestock production will be decelerated during the Seventh Five-Year Plan. A 6.6 percent in increase in gross livestock production, an 8.3 percent increase in the procurement of slaugher animals and a more than 11 percent increase in the procurement of milk over the results of the Sixth Five-Year Plan are under consideration.

With such a rate of growth in production and procurement, the supplies of meat and meat products to the consumer goods inventory will be sufficient to cover the higher consumption which reflects the increase in our population; we shall continue to maintain in the future practically the same high standard already attained in per citizen meat consumption. It would be fallacious to characterize the stagnation in per citizen meat consumption as a sysmpton of a declining standard of living. Instead, our meat consumption should be compared with that in other developed socialist and capitalist states and regarded as a sympton of special concerns and interests by the CPCZ in the quality of food supplies and nutrition of our population. We can prove this assertion with several examples. Many developed states with per citizen acreage of agricultural lands higher than that of the CSSR consume less meat; for example, the Hungarian People's Republic has almost 0.20 hectares of agricultural land more per citizen than our country, yet its per citizen meat consumption is about 12 kg less than that of the CSSR.

An immensely demanding task will be gradually accomplished by means of the structural changes in our livestock production outlined at the 13th Plenum and motivated above all by considerations of a dependable fodder base. In the Seventh Five-Year Plan the share of the procurement of slaughter cattle in the total procurement of slaughter animals will amount to 48.4 percent, while in the Sixth Five-Year Plan it represented only 42.4 percent, and the share of the procurement of slaughter hogs will be 55.7 percent, in other words, the procurement of slaughter cattle in the Seventh Five-Year Plan will be up by 11.1 percent over the Sixth Five-Year Plan, and of slaughter hogs only by slightly over 6 percent.

In accordance with the directives of the Seventh Five-Year Plan, the state executive plan for the current year is characterized essentially by the achievement of the required preference for higher plant production over livestock production. In other words, a 6.8 percent increase in our plant production over 1980 is envisaged. The development of our plant production is limited by the resources and structure of fodder which does not make it possible, except for the development of cattle production, for this year's production to keep up with the 1980 production and procurement. For that reason this year's plan for the procurement of slaughter animals is 12,796 below the results of 1980; on the other hand, procurement of slaughter cattle is more than 20,000 tons above the 1980 results. However, the plan for the procurement of slaugher hogs is 32,000 tons lower, and of slaughter poultry almost 14,000 lower than last year's results. In addition to the procurement of slaughter cattle, the plan for the procurement of milk is 58 million liters higher this year than last year.

As evident from the structure of this year's plan for livestock production, the tasks in the procurement of less grain-intensive products (i.e., beef and milk) are raised and conversely, production which requires large amounts of grain is cut down (slaughter hogs and poultry). Last year's plan aimed at similar targets but failed to achieve them. A great many enterprises evidently will continue this year their tendencies to keep producing slaughter hogs and poultry irrespective of domestic grain fodder sources in the expectation that the problem will be resolved by allocations from the central fodder fund, as it had been in the past. Such tendencies must be fought on every level because all possible supplies of grain fodder have in fact been exhausted.

In view of the high inventory of hogs at the end of 1980, particularly in the CSR, and of lower fodder supplies, the numbers of hogs must be reduced even at the cost of lower slaughter weight. Nevertheless, we must not reduce the primary herds at all because the tasks in the procurement of slaughter hogs will be increased again in 1982.

The managing echelons have recently been exerting considerable pressure on conservation and more efficient utilization of fodders. The Mandatory System of Management and Utilization of Fodders, which contains the principles of that program, was so successful last year that this year it has been reprinted with some modifications. Grain consumption has been gradually reduced per unit of production, which proves that economical use of fodders is considered imperative. Thus, for example, grain fodders consumed in 1979 in the CSSR amounted to 0.29 kg per liter of milk and to only 0.26 kg last year. The consumption of grain per kg of slaughter cattle dropped from 2.70 to 2.42 kg, and of slaughter hogs from 3.87 to 3.74 kg. However, these results cannot satisfy us, mostly because marked differences still appear between individual krajs, okreses and enterprises. For instance, fodders consumed to fatten slaughter hogs has been for several years lower by 0.25 to 0.30 kg in the CSR than in the SSR, and on the other hand, grain consumed to fatten cattle was about 0.30 kg lower in the SSR than in the CSR. The differences between individual krajs, okreses and enterprises, which are even more conspicous, clearly indicate the reserves in this area which are not negligible. Therefore, during the next five-year plan management and political-organizational work on all levels of management, particularly in agricultural enterprises must pay attention above all to establishing optimum raitions of feed for individual types and categories of livestock on the basis of analyses. More careful attention must be paid to technological processing. Enterprises must create preconditions for establishment of central stations for mixing bulk fodder. More accurate documentation will be required; fodders must be systematically controlled and their consumption must be analyzed by comparison of individual attendants, stables and farms within enterprises and also of enterprises in a given okres.

In the system of rewards granted to attendants, feeders and zootechnicians, the amount of grain consumption and overall economy with fodders and not the overfulfillment of production tasks at any price, must be more emphatically enforced as the indicator for the award of bonuses.

For the future, we envisage the development of livestock farming by contract, which will considerably help increase the consumer goods inventory of meat. In the period from the launching of this action in 1979 to the end of 1980, contracts concerning about 46,000 heads of slaughter cattle, more than 41,000 sheep, about 50,000 geese and about 1 million rabbits were concluded with small keepers. This represents a total of more than 16,000 tons of meat.

It is a positive aspect that this production is mostly provided by contractors who had not been involved in livestock farming in recent years. The following data prove that fattening on contract is advantageous: while in 1979 only slightly more than 10,000 tons of live weight of slaughter animals were procured in the first through the third quarter from the private sector, last year such procurement increased to 15,750 tons.

It should be underscored that the objective of fattening on contract is to obtain additional sources of meat and thus, procurement from fattening on contract should be considered on principle a resource above the plan stipulated for socialist enterprises.

We cannot therefore agree with procedures in certain okreses where the okres agricultural administrations failed to provide socialist enteprises with detailed specification of the entire volume of procured slaughter animals because they included the production of fattening on contract by small contractors in the overall fulfillment of the plan for that particular okres.

Certain okreses follow another incorrect procedure, namely, the JZD [unified agricultural cooperatives] and SM [state farms] conclude contracts for fattening of the livestock with their own members or workers, or even with other small farmers. It must be emphasized once again that the production from fattening on contract must be in every case in addition to the actual stipulations of the state plan.

As follows from the decision of the 18th Plenum of the CPCZ Central Committee, the task of our agriculture is to continuously increase the consumption of milk and milk products and among other foods, particuarly the consumption of vegetables and fruits. Per citizen meat consumption must be maintained at the current level. We presume that in the sector of our party's agricultural policies the 16th Congress will reaffirm the decisions of the 13th Plenum of the CPCZ Central Committee, in other words, we must expect demanding, yet very realistic tasks for the Seventh Five-Year Plan in the sector of livestock production. It may be mentioned that a rather solid base has been created in general in the last year of the Sixth Five-Year Plan as the point of departure for the further successful growth of livestock production, mainly in inventories and in higher utility values. If we gradually succeed and turn the corner in the production of fodders both in terms of quantity and quality, we shall fulfill the tasks of the Seventh Five-Year Plan.

9004
CSO: 2400/193

STATE OF CSR POULTRY INDUSTRY VIEWED

Prague NAS CHOV in Czech No 4, Apr 81 supplement DRUBEZARSKY PRUMYSL pp 1-2

[Article by Eng Vaclav Cervenka, general director of the poultry industry, Prague office: "The Poultry Industry during the Sixth Five-Year Plan and at the Beginning of the Seventh Five-Year Plan"]

[Text] The poultry industry economic production unit [VHJ] has undergone important changes in the past 5 years. Through its merger with Xaverov Poultry Enterprises, sectorial enterprise on 1 January 1976, there emerged a comprehensive VHJ possessing the potential for close cooperation and integration between agricultural enterprises and poultry production.

The implementation of a program of specialization and concentration of processing plants has been initiated in the poultry industry and stems directly from the specialization and concentration accomplished as early as the Fifth Five-Year Plan in the area of poultry raising. The arrangement of specialized poultry industry factories along production and organizational lines with separate retail outlets improved the conditions for the coordinating of agricultural enterprises with processing plants. The interregional transfer of poultry for slaughter basically was eliminated. A total of 4.5 million head had been transferred in this way in 1975.

Beginning in 1977, a program was introduced of weekly schedules for the selection of day-old chicks and the culling of others for slaughter, both of which are a precondition for the coordination of the whole production process from the breeding, production of the eggs to be hatched, the hatching of the chicks, their selection for fattening and slaughter of the poultry, right on through the warehousing, further processing and marketing. This whole process can be handled only with the aid of computer technology. The general directorate manages the process because no region has yet brought all of these phases into balance.

There will be an increasing need for coordination of a planned charcter and for planning discipline, because the specialization and concentration process will continue to intensify both in the husbandry and in the processing areas.

To date these schedules have frequently not been adhered to. This is the fault not only of the poultry industry factories, which do not adhere to the schedules for deliveries of day-old chicks or of poultry for slaughter, but also of the husbandry enterprises. Every break in these schedules sets off a chain reaction and is compensated for with great difficulty. The functioning of the system of schedules for the whole year depends on the discipline exercised by each and every participant in the whole production process.

Even though there are shortcomings in the application of this system, the Sixth Five-Year Plan saw a significant increase in the utilization of both processing and husbandry facilities. The production of poultry for slaughter increased by 40 percent during the Sixth Five-Year Plan almost without the construction of new processing or husbandry facilities, and with only limited redesign (basically noncapital rationalization) of the existing operations.

Through the understanding of the husbandry enterprises and in cooperation with agricultural administrations, we were able to shift the times for loading poultry to the early morning and to nighttime hours. This enabled us to eliminate the traditional preslaughter confinement of the poultry and, by reducing the time beween loading at the husbandry facility and slaughter, losses of meat during transportation were reduced by 2,400 tons.

The continued improvement in the supplying of the retail network with poultry products and the resultant balancing of fluctuations in the supply of meat enabled the poultry sector to fulfill the directives of the 15th CPCZ Congress. The product mix improved, deliveries of cut up poultry doubled, and five times as many smoked poultry products and specialty products were delivered last year than in 1975.

The share of poultry products in the total sales of foodstuffs in the CSR had already exceeded 6 percent in terms of retail prices. At the same time the poultry industry supplies semiprepared products to other foodstuff sectors and fulfills demanding export targets as well.

Nevertheless, throughout the whole Sixth Five-Year Plan the market needs for all kinds of poultry were not satisfied. There were shortages, which remained for the duration of the five-year plan, of geese, ducks, and turkeys, so-called "Christmas goods." And this was true in spite of the fact that purchases of geese were 130 percent greater in 1980 than in 1975, and turkey purchases were up 127 percent. Purchases of ducks remained level. The purchase of poultry for slaughter increased 38.5 percent, but an increase in volume of 34,247 tons meant that the percentage of chickens for slaughter increased in relation to the total purchases of poultry for slaughter (see Table 1). To improve supplies, there must be further development of goose, duck, and turkey production.

Table 1. Individual Types of Poultry as Percentage of Total Purchases

Type	Year 1975	 1980
Chickens	74.4	76.3
Hens	10.8	8.7
Turkeys	2.5	4.1
Geese	1.7	2.9
Ducks	10.6	8.0
Total	100.0	100.0

The Sixth Five-Year Plan also marked further development in chicken husbandry and the production of eggs for consumption. The completion of a program of coop reconstruction, during which single-floor cage technology replaced multifloor cage technology, increased chicken flocks at socialized husbandry operations. Egg purchases in 1980 increased 14 percent in comparison with 1975 and purchases from socialist operations increased further.

In 1970, the private sector accounted for 17.4 percent of total egg purchases, 9.1 percent of the 1975 total, and not quite 2 percent of 1980 purchases. And this occurred despite the increased activity of consumer cooperatives and the poultry industry in the organization of purchases, and in spite of the increased availability of nonwhite chickens to small operators.

It is clearly a mark of success that the process of concentration in chicken husbandry has been accompanied by an increase in productivity. The average yield at socialized husbandry operations was 191 eggs in 1970, 253 eggs in 1975, and 259 eggs in 1980.

A decrease of 1.5 grams in the average weight per egg over the Sixth Five-Year Plan is a negative phenomenon, as is the large number of nonstandard eggs. Twenty-three percent of the purchased eggs are ruled unsatisfactory at the classification stage for supplying the market because of broken shells or because they are too dirty. This is more than double the total for countries with a mature poultry industry. It is caused by a combination of technology, insufficient mineral nourishment, as well as zootechnical activities and the handling of eggs.

During the Seventh Five-Year Plan it will not be possible to count definitely on the same dynamic development of poultry husbandry as in recent years, because of the great demands placed by poultry on concentrated feeds and on components of feed mixtures imported from nonsocialist countries. At the same time, because of its rapid reproductive abilities, poultry will continue in the Seventh Five-Year Plan to play an important role in the feeding of the population, and in compensating for fluctuations of meat supplies for the market. So that it may fulfill this role in our national economy, we must achieve a reduction in the consumption of feed per kilogram of meat produced and per egg produced. In other words, we must produce more poultry and more eggs from the volume of feed allotted to the poultry industry. This demands a comprehensive solution and comprehensive approach. Last year the consumption of feed declined by a mere 4.5 grams per egg produced. For the CSR, however, this meant a saving which made possible the production of an additional 52 million eggs.

The plan for the purchase of poultry for slaughter for this year has been significantly reduced from the level reached in 1980. Increased marketing requirements allotted to the poultry industry following the detailed breakdown on the plan, forced a decision by the central agencies to increase purchases of poultry for slaughter by 5,000 tons with a feed allotment. However, not even this will be enough to maintain essential inventories by the end of 1981, and it will be necessary to assure an additional 5,000 to 6,000 tons of poultry for slaughter.

To meet this goal, the poultry industry is formulating, along with the industry of agricultural supplies and purchases, measures aimed at increasing the quality and efficiency of feed mixtures. Additional forceful measures, however, must be focused on the area of feed management. Through the first three quarters of 1980, fully 100 of 228 monitored husbandry enterprises engaged in the fattening of poultry displayed an above-average rate of consumption, i.e., over 2.55 kilograms.

There is additional unutilized potential in the continuing bad habits in the feeding of poultry during deliveries to the slaughter house. There is a source here of at least 1,500 tons of poultry for slaughter. Material incentives for managerial employees of the poultry industry have been focused on this area with the objective of fostering close cooperation with agricultural administrations.

In connection with the reduced plan for purchases in 1981, attempts have appeared to liquidate poultry facilities. Such intentions would threaten the very beginnings of the Seventh Five-Year Plan. Measures should, on the contrary, be directed at modifications in temporary facilities, extending their useful life, improving their insulation and technical outfitting, especially their climate controls. The previously formulated program for reconstructing chicken coops with improved technology should be continued. In the past five-year plan there were new construction projects in only two regions, and these were only the completion of coops as additions to already existing facilities. Projections for the Seventh Five-Year Plan include new construction for poultry in only one region. This situation requires reevaluation.

Due to increased requirements for the production of poultry for slaughter than provided for by the plan, we must return to an increased slaughter weight for chickens of 1.70 kilograms, and assure the importation of day-old chicks from the People's Republic of Hungary.

The poultry industry, during the Sixth Five-Year Plan, carried out a rebuilding program which led to its own fattening facilities for 110,000 chickens and to breeding coops for the production of eggs to be hatched. But due to very limited possibilities for new construction, there are still insufficient facilities for the production and hatching of eggs.

The poultry industry VHJ, because of its organization and in-house preproduction husbandry activitiy, possesses the optimal conditions for cooperation and integration with husbandry enterprises. The responsible employees of the poultry industry are aware that the basis of the performance of the processing plants both in terms of volume and quality lies in the husbandry enterprises. They are also aware of the fact that they have a significant influence on the results achieved in the poultry coops of agricultural enterprises.

Beginning with the creation of the comprehensive poultry industry VHJ in 1976, relations developed throughout the Sixth Five-Year Plan with agricultural enterprises, from coordination to cooperation to the inauguration of vertical integration. The positive results from the cooperative mergers in the area of the production of eggs for consumption in the South Bohemian and North Bohemian regions has pointed the way to further progress in the development of vertical production integration in the regions of the processing plants. The development of this integration is being aided by the existence of the integration fund, which was created by the poultry industry in 1979 as part of the introduction of the experiment in efficiency and quality. The utilization of this fund is prescribed by a statute approved by the Ministry of Finance, and is tied to the generation of resources with the poultry industry VHJ. So far Kcs 19 million have been provided from this source to agricultural enterprises according to integration agreements.

The poultry industry VHJ became a concern as of 1 January 1981. This is a further step in the continuing process of concentration and specialization during the 2-year period of the verification of the experiment. In this way, space is created to make managerial work more effective and for the further intensification of cooperation and integration with husbandry production.

9276
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USE OF GALLIUM FOR INTEGRATED CIRCUITS DISCUSSED

Bratislava PRAVDA in Slovak 7 May 81 p 3

[Article by Jozef Krsko: "The Assault on Gallium Continues"]

[Text] "Hold this for a moment," Eng Michal Babinsky, CSc, head of the Department of Pure Metals and Semiconductors of the Research and Development Institute of the SNP [Slovak National Uprising] Plant in Ziar nad Hronom, told me, handing me some silvery wire. I held it between my fingers, wondering what would happen next. Would Engineer Babinsky put the metal into the mass spectrometer that was on hand? What might the instrument show?

"Nothing yet?" asked Engineer Babinsky after a moment. Not realizing what he meant by "nothing," I took hold of the free end of the wire with my other hand and tried to hand it to him, when I realized that the regular, bright shape had become deformed and melted between my fingers.

Success Did not Mean Rest

The silvery wire was made of gallium, a metal with a melting point of 29.74° C. Previously it was a component of industrial waste. In the past, the production of gallium presented no interest. Only a couple of tons a year was used worldwide. It was used, for example, as a component of the reflective surfaces of mirrors. It began to become more interesting as a result of the further development of human knowledge, particularly when it was found that it could be used to make the national economy more efficient.

Pure gallium was successfully produced from waste products in laboratory conditions by the SNP plant in Ziar nad Hronom in 1963. But it was still a long time until its industrial production began. Seven more years passed before the first of the metal, now in demand, was industrially produced in equipment with a production capacity of 500 kg of pure gallium a year.

One might think that the startup of production marked the end of the hard work, that there followed years of glory, and of harvesting the fruits of the work, because now there was great interest in pure gallium worldwide. For the last 10 years, several tens of million of korunas worth has been produced in Ziar, and about 90 percent of the total quantity has been exported to the Soviet Union, East Germany, Poland, the United States, Japan, West Germany, the United Kingdom and Switzerland. Currently, equipment for producing 5,000 kg of gallium a year is going into operation, which would mean that about 15 percent of the world's output would be produced in Ziar nad Hronom. Thus economic success has already been achieved. Its main developers have also received honors: in 1978, the presdient of the CSSR awarded the Klement Gottwald State Prize to Eng Michal Babinsky, Candidate of Sciences, to Eng Joraj Grexov and to Eng Frantisek Stulakov. Nonetheless, more work, equally hard, is continuing.

Silicon: Deposed King?

Recently there has been worldwide discussion of gallium. Some specialists, for example, designate the year 1980 is "year zero" in terms of the production of integrated circuits using gallium. It was in that and subsequent years that the boundary between laboratory and industrial production of new integrated circu'ts was to be crossed. It is expected that the output of integrated circuits will increase from the current value of $6.3 billion to $15 billion by 1985. More important, about 10 percent of it will be based on compounds of gallium with other elements, primarily gallium arsenide. What are their advantages?

"For example, did you read this year's fourth issue of TECHNICKY MAGAZIN?" Eng Lubomir Simko member of the Independent Scientific Staff of the Research and Development Institute in Ziar nad Hronom, countered with another question. "It contained an article entitled 'Silicon: Deposed King.' This was an exaggeration, because silicon components still have an important advantage, in that they are considerably cheaper. But there is some cause for a 'dethroning' of silicon."

The cause is primarily speed, for electrons travel 4 to 5 times faster in gallium arsenide than in silicon. In addition, the new material has beeter dielectric properties. Overall, this makes it possible to transport considerably more information than when using silicon. Currently, high-quality silicon components can transport signals with frequences of about 2 gigahertz.

"Above 4 GHz, silicon components cannot be used," adds Eng Dusan Mihalek member of the Independent Research Staff, "In contrast, components using gallium arsenide will be able to carry signals up to 40 GHz, (i.e., 40 billion cycles per second)."

The Painstaking Pursuit of Six Nines

It is true that not all problems of the industrial production of integrated circuits based on gallium have yet been solved. Until recently, one of the most important problems was the growing of pure crystals of gallium arsenide.

The workplaces in the Department of Pure Metals and Semiconductors of the Research and Development Institute of the SNP Plant in Ziar nad Hronom receive so-called "six nines" gallium. This means that its purity is measured in six digits: it must be 99.9999 nercent pure. The arsenic must also be brought to this level of purity.

"Once or twice when it has been otherwise, we have found it out in our research results," says Eng Lubomir Simko. "By negative results," he adds.

Eng .avla Novakova and Jan Getler are working to see that in the future they will not have to overcome problems arising from lack of purity. They test each sample in the mass spectrometer, one of 12 devices of its kind in the world, or in one of two electronic detection devices in Europe. While in other, even better equipped, laboratories, it takes half a day to determine one substance precisely, here they can determine the proportions of all elements in Mendeleyev's table which are present in compounds in a few hours. But even the most modern equipment does not replace man in this work: it can only make the work easier. Each substance tested has its own conductivity, and does not ionize evenly, and accordingly it is always necessary to look for other bases for analysis. Without harming the sample, its composition must be determined with a precision amounting to the above-mentioned six figures. Only after it is found that the sample has the required purity is it assumed that it will be possible to grow a gallium arsenide crystal.

Engineers Dusan Mihalek and Lubomir Simko take out of a box a polyethylene container of gallium enclosed in additional packaging. They place the gallium in a special container, with arsenic and other precisely determined additives and boron trioxide. The 34-hour process of drawing the monocrystal of gallium arsenide at a temperature of 1,234°C can begin. During the process the materials gradually crystallize into a nuclear monocrystal of the required crystallographic orientation, which grows; they draw it out so as to obtain a more or less regular rounded shape. The base material for this new area of microelectronics, the gallium arsenide crystal, is ready. Eng Dusan Mihalek uses wax to attach the crystal to a ceramic base and checks its orientation with an X-ray goniometer, then cuts the semiconductor into wafers with a diamond disk saw, with a precision to within tenths of a degree. In this form, the aluminum industry workers in Ziar give Czechoslovak electronics engineers a gigantic opportunity. They also give them a high-quality raw material, equal to the best in the world, and--equally important--one produced from domestic sources, for the development of this promising sector. This is an opportunity which simply begs to be utilized.

Answer to Requirements Imposed by Party Congress

The waste which remained after the processing of bauxite raw materials and the production of aluminum caused problems and accumulated without a possibility for further use. It became useful after the design and implementation of a new process for producing pure gallium. And now let us compare: a kilogram of this substance has a value of more than Kcs 14,000, and we export most of it. A kilogram of semiconductor wafers costs Kcs 460,000, but these are still only dead things. "Giving them life," convering them into digital electronics components, would give them an even higher value, both for export and at home.

"I think," muses Eng Lubomir Simko, " that this is a possibility for better upvaluing and more efficient use of energy and raw materials and assuring an increase in quality and technical standards of our products."

This is in accordance with the guidelines designated by the "Main Directions of Economic and Social Development of Czechoslovakia in 1981-1985" approved by the Sixth Central Committee Plenum: "By priority development of electronics and particularly microelectronics, to systematically increase the utility value of products and processes,...and thus to accelerate the growth of labor productivity and decrease consumption of energy and materials...."

The collective of the Department of Pure Metals and Semiconductors of the Research and Development Institute of the SNP Plant in Ziar nad Hronom has not stopped at mere verbal agreement with the tasks which are mapped out by the 16th CPCZ Congress for our entire society. Among other things, this is confirmed by the report which their enterprise magazine recently published. The report says: Eng Michal Babinsky, CSc, has reported fulfillment of the socialist commitments undertaken by the staff of the Research and Development Institute in honor of the 16th CPCZ Congress. On the first day of the session they produced an above-plan amount of gallium worth Kcs 94,240. He also reports that two workers in the collective, Engineers Lubomir Simko and Dusan Mihalik, have prepared during those days the first samples of a new generation of gallium arsenide suitable for optoelectronics."

The ultimate fulfillment of the above-mentioned task assigned by the 16th CPCZ Congress however, rests with the electronics engineers. The raw materials and conditions for it have already been created.

8480
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TRENDS IN DEEP-SEA FISHING FOR 1980'S OUTLINED

East Berlin SEEWIRTSCHAFT in German Vol 13 No 5, May 81 pp 247-250

[Article by Capt Georg Haasler, engineer, economist, chief inspector for maritime safety and navigation, VEB Fishing Combine, Rostock: "The GDR's Deep-Sea Fishing and Its Possibilities Under the Changed Conditions of the 1980's"]

[Text] Third UN Sea Law Conference, which has been in session since 1973, is to terminate its activities with the passage of a new sea law convention during the second half of 1981. Several years will pass until its entry into force because the convention must first be ratified by a corresponding number of participating countries which represent a specifically determined ship tonnage inventory. This process is of practical significance to ocean fishing only to the extent that the expansion of the national fishing zones from 3 or 12 nautical miles to 200 nautical miles, which is to commence as of the start of the conference, is to be approved under international law afterward by all coastal countries. The expansion of the fishery limit to 200 nautical miles or the establishment of national fishing zones or economic zones was a particularly hard blow to countries which, because of their short coastlines, are dependent upon long-distance fishing; those countries also include the GDR or such other countries which do have a long coastline but whose coastal approaches do not contain sufficiently productive fishing grounds to meet their fish needs.

The buildup of the GDR's own ocean fishing fleet began in 1949 with Soviet help, along with the construction of fishing ports and the improvement or new construction of a fish-processing industry. Fish was urgently needed for feeding the GDR population, in much larger quantities than the beach and coastal fishermen were able to catch along the GDR coast. There were, to be sure, rich stocks of fish in the fishing regions in the Baltic and the North Sea, off Iceland and off the Norwegian coast, in the Barents Sea and in the rest of the Arctic Ocean. We need corresponding vessels, techniques, and above all skilled crews so that we might use them for the GDR. We were able to place ever larger and more modern ships in service and we were able to deliver more and more fish. The crews very soon operated their new equipment skillfully and through their achievements contributed to the international recognition and respect given to the young republic.

We were able to fish in ever more productive although partly more remote fishing grounds as a result of the fleet's growth, the use of larger, technically and technologically more modern ships (for example, factory vessels and fishing flotillas with base vessels). In the beginning, GDR fishing vessels were operating exclusively in the Baltic and the North Sea; between the middle and the end of the fifties they were already operating in all northern European fishing grounds and we began our first fishing cruises to the fishing grounds off Newfoundland and Labrador. During the sixties, GDR fishing vessels were already operating in all fishing grounds in the northern Atlantic and the Arctic Ocean, including the fishing regions off Greenland and the coast of the United States. The first fishing expeditions were also carried out in African waters. The organizational structure of the GDR fishing fleet was adapted to fishing conditions in northern maritime regions. Equipment and technology were geared toward catching and processing the kind of fish that was in keeping with the population's consumption habits. That included mostly herring, sprats, cod, Norway haddock, flounder, and salmon. The vessels in our cutter deep-sea fishing component were operating in the Baltic and the North Sea while the long-range ocean fishing vessels operated mostly off Iceland, Greenland, Canada, the United States, as well as the coast of Norway all the way up to Spitsbergen and in the Barents Sea, in the so-called remote regions. Fishing operations in the individual regions depended on the intensity of the spawning and feeding conditions for the various species of fish and on environmental conditions, in other words, they were heavily seasonally influenced.

As an expression of worldwide recognition for the GDR, ocean fishing conditions among other things also changed. Joining the major international fishing conventions, in addition to a series of positive results, also entailed certain restrictions in fishing possibilities due to the determination of catch quotas and other measures regulating the catch volume. To make sure that these fishing restrictions would not have a negative effect on the supply for the population, the yield from the fish caught was increased with the help of new technologies and modern machines, for example, the waste deriving from the killing and filet-cutting of fish was reduced.

By using modern information methods and equipment and through the broad involvement of scientific discoveries it was possible to improve operational planning further and to use the vessels in such a manner that both the catch quotas were utilized to the most extensive degree, while it was also possible to make optimum use of the fishing regions that were as yet still available. In addition to further organizational measures, crew rotation and the use of refrigerator and transport vessels led to better fleet management and thus to an increase in its assets due to a reduction in the time required for the round-trip as such. The consistent implementation of all of these measures and target-oriented ideological work with the ocean-fishing crews guaranteed a rich catch for many years.

In the European area, it was first of all Iceland--a country which lives from fish --which during the early sixties extended its territorial waters from 3 to 12 nautical miles, followed by a 50-nautical mile fishing zone and, in 1974, finally, a 200-nautical mile economic zone which is at the same time a fishing zone. This one-sided measure, justified in terms of the biological threat to the fish stocks around Iceland and the demand to implement the exclusive national utilization of live ocean resources in that region, at first led to serious controversies with all fishing countries which until then had engaged in highly worthwhile fishing in the Icelandic fishing grounds. In the course of the sessions of the Third UN Sea Law Conference, the countries, which were in favor of expanding the fisheries limits to 200 nautical miles, increasingly prevailed with their viewpoint. After other countries (for example, the United States, the EEC countries, Norway, and Sweden) likewise expanded their fishing zones, the socialist countries likewise had to alter their views, which were aimed against extreme expansions of zones reserved exclusively for coastal countries, and established their own fishing zones.

The demand of the geographically disadvantaged countries (which also include the GDR)--to the effect that they should get fishing rights from the surplus of other coastal countries--is connected with the general recognition of the right of the coastal countries to utilize ocean resources in a 200-nautical mile coastal approach zone (to the extent that this is geographically possible) as well as their pledge to regulate fishing and to implement measures designed to prevent excessive fishing and protect fishing resources. This means that the share of the possible catch, which was in advance determined by a particular coastal country and which the latter was not able itself to catch, was to be made available to other countries.

Although this is not yet generally recognized international law, there is today hardly any coastal country which has not established its own fishing or economic zone in conjunction with its territorial water. In practice, the abandonment of the basic principle of "free fishing," such as it had prevailed approximately since the 17th century, developed to the extent that, upon the establishment of national fishing zones, the coastal countries independently exercise sovereign rights over almost all fishing regions that had been worked until now, that is to say, they are no longer subject to any international control. This means that about 90 percent of the hitherto internationally used fish stocks are now under the national legislation of the particular coastal countries. Basically, each coastal country makes its decisions on the basis of its own--often quite insufficient--knowledge regarding the volume of the possible catch and the surplus that might possibly be distributed. It determines according to its own estimate which countries it allows to fish from the surplus in its own fishing zone and under what conditions. These conditions mostly involve the size and number of vessels allowed to fish, the number of fishing ground days per ship, determination of restricted fishing areas and no-fishing zones, restricted fishing times, fish lengths, determinations regarding fishing gear, as well as supervisory and other measures.

In this connection we can increasingly clearly recognize a trend to the effect that the coastal countries, which already have a well-developed national fishing industry, however also those other countries, which by virtue of their economic potential are in a position to build up their own ocean fishing industry, are trying as soon as possible fully to utilize the fish wealth off their own coasts themselves so that they no longer allow any foreign fishing vessels to enter their fishing zones. That involves especially the European and American countries. For example, the United States has already indicated that only very small surplus quantities [illegible] be distributed over the next several years. This is so even though the fishing grounds off the United States coast during the years prior to the establishment of fishing zones were included among the most productive fishing grounds in the North Atlantic--areas that were being harvested by international fishing fleets. Compared to the total fishing volume, the volume caught by American fishermen was extremely small.

The situation is different in those countries which for the time being do not have the economic strength quickly to build up a modern fishing fleet with the corresponding support facilities (fishing ports, repair yards, fish processing plants, fish trade, etc.) and which do not have the necessary technical personnel to operate the vessels and the support facilities in order to exploit the existing fish stocks in an economically and biologically meaningful fashion.

The fishing zones of those countries--primarily African countries--thus have a real big surplus. These countries, whose long-range goal as a rule likewise involves the buildup of a strong national fishing industry, are using their fish wealth by selling the fishing rights to interested parties or by allowing and supporting the formation of mixed companies for fishing and for the processing of fish and other marine animals.

During the middle of the seventies, the expansion of the fisheries limits in most of the fishing grounds harvested by the GDR became so noticeable that the yield dropped by about 40 percent compared to the earlier years. Not until the end of the seventies was it possible, due to a large number of fishing-policy activities, again to attain a level which--considering the fleet's organizational structure--roughly corresponded to the level prior to the introduction of the new fishing zones. The lessons learned so far, the investigations in the fishing-policy field, the exploration and development of new catch and production possibilities, and the preparation of long-range development programs in recent years form the foundation for the strategy and tactics of GDR fisheries policy during the eighties and guarantee the employment of the GDR fishing fleet during that span of time. Considering the anticipated international fishing-policy developments and its own reproduction conditions, the GDR ocean-fishing industry has the following possibilities for guaranteeing the supply of the population with fish and fish products during the coming years:

Even more efficient utilization of catch possibilities in ocean areas that are still freely available;

A stable optimum fishing system, in keeping with biological possibilities, instituted in the GDR's own fishing zone;

The development of industrial fish production in coastal waters and increased fishing in inland lake waters, in the wetlands in our coastal districts, and the other inland water bodies in the GDR;

Stabilization and expansion of international relations in order to obtain fishing rights in the fishing zones of other countries; and

Active cooperation in the currently existing fishing conventions to preserve catch quotas for special species of fish in the maritime regions administered by these conventions.

The possibilities for fishing operations in as yet freely available ocean regions are relatively limited. As far as we know today, they would include the waters in the Antarctic, in which the GDR fleet has been doing seasonal fishing for several years, as well as parts of the southeastern Pacific. The long distances which must be covered here--compared to the north and middle Atlantic fishing grounds--result in considerable economic burdens in connection with fishing operations. For the sake of the most economical possible operations it is necessary to use large and complex flotillas which have floating or shore bases for repair, reequipment, and fuel supply, as well as refrigerator vessels to remove the fish that was caught and that was subsequently deep-frozen. Another possibility would be to switch to deeper fishing grounds outside the fishing zone. So-called "deep-sea fishing" however entails a series of presently as yet unresolved problems and is connected with relatively heavy cost and great difficulties. Compared to the fishing grounds used so far, we have enormous pressure increases whose effects on the fishing gear cannot yet be fully countered. We need new technologies and techniques for lowering and raising fishing gear and for drag-netting at great depths and we still do not have sufficiently reliable biological knowledge concerning the possibilities of productive fishing in deep ocean regions.

Fishing operations in the GDR's fishing zones in recent years assumed increasing significance for the GDR fishing industry, especially after the introduction of fishing zones in the entire Baltic Sea. Prior to the introduction of the new fishing limits, the annual catch volume in the region of the present-day GDR fishing zones amounted to about one-third of the total catch volume of ocean fishing in the Baltic Sea; today, about 90 percent of the GDR's Baltic Sea catch is annually put ashore from that region. In addition we have the fact that we can get herring, which is so popular in the GDR, almost only from that fishing region now. A well-coordinated and far-sighted fishing policy will also help us keep fishing operations steady in this fishing region in the future. This can be promoted especially by the following:

Production of young fish through the establishment of restricted fishing zones;

Ban on fishing and determination of minimum mesh size;

Constant biological inspection of the productivity of our fishing stocks;

Coordination with other Baltic Sea countries in the context of the Baltic Sea Fishing Commission.

Right now, increasing attention is being devoted to the development of industrial fish production in coastal waters. Trout breeding and carp production under brackish water conditions will be increased from several hundred to more than a thousand tons. The necessary personnel, financial, material, and organizational measures have been launched and the first production plants of this kind are working successfully. In connection with the need for the better utilization of our own reserves, we are assigning more and more significance to the republic's total water reserves, the ponds, rivers, and lakes. In these waters, yields are being increased through increased stocking with young fish, through the improvement of sanded or mud-clogged lakes and ponds, and corresponding environmental protection measures.

The further improvement and consolidation of relations with other coastal countries --among other things for the purpose of obtaining fishing opportunities in their fishing zones--are of decisive importance in terms of the employment of the GDR ocean fishing fleet. One possibility would be to enter into fishing treaties. On their basis, traditional rights could be claimed within certain time limits, and reciprocal services (for example, scientific-technical performance, biological and fishing-technique research work, vocational training) as well as the purchase of fishing licenses could be agreed upon.

Another possibility for fishing in productive fishing grounds in the fishing zones of other countries involves the establishment of joint, so-called "mixed companies" (see also the article entitled "Status and Prospects of Ocean Fishing," No 3, 1981, SEEWIRTSCHAFT). Various forms are possible here whereby the coastal country as a rule contributes the initial capital and--to the extent that they are in existence--the shore facilities and issues permits for fishing while the other country in the association makes the ships available. This is mostly connected with the requirement for recruiting a portion of the crews for those ships from the coastal countries. The establishment of such mixed companies however makes sense only if the fishing zone of the coastal country contains fishing grounds which for many years to come facilitate a high yield. This must involve species of fish which can be readily sold on the world market because marketing is handled by the company under the terms of the capitalist market economy. Naturally, this also includes a series of other prerequisites, especially regarding the stationing of fishing vessels. Here we are presently on virgin territory in the fishing industry and we must yet gather the necessary experience.

In recent years, a certain share of the catch was guaranteed on the basis of reciprocal treaties, for example, through mutual exchange of fish caught, through the grant of traditional fishing rights, or the purchase of fishing licenses; so far it has not been possible to obtain fishing rights through the formation of a mixed company. The negotiating partners either introduced demands that could not be met or the economic and fishing prerequisites for the establishment of the company did not correspond to the objectives of both partners. Sometimes the establishment of a mixed company however simply failed because of the legislation of the particular coastal country in whose fishing zone the GDR is interested.

Another kind of international cooperation in fishing involves fishing operations on a contract basis for individual foreign companies in their fishing zone. This involves a kind of service which is paid for by a part of the fish caught. The company gets the fishing license from its government.

During the coming years, the GDR fishing fleet will be further rebuilt. New units will be placed in service and obsolete vessels will be taken out of the inventory. That involves not only long-distance fishing vessels but also the cutter fleet, which is used mainly in the GDR fishing zone. With the support of the party leadership and the government, the republic's ocean fishing industry is carrying out the measures necessary to guarantee the utilization of the fishing fleet. Through their complexity, these measures enable us to make sure that the GDR ocean fishing industry will in the future likewise be able to supply the fish needed for feeding the population, considering international fishing-policy developments.

5058
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SOCIAL FACTORS OF ECONOMIC RENEWAL

Budapest MAGYAR TUDOMANY in Hungarian No 4, 1981 pp 243-252

[Article by Jeno Andics: "The Social Factors of the Economy's Renewal"]

[Excerpts] The radically changing prices of goods and services in the world economy in the 1970s, the narrowing of our provenances of raw materials and energy, the more difficult opportunities for selling our goods on foreign markets, etc. have resulted jointly not in stricter conditions under which the Hungarian economy must compete internationally, rather essentially in an external economic situation that jeopardizes the sum total of Hungarian society's achievements to date. The most urgent task of adjusting to conditions stricter than before is to defend the present situation, which in itself requires enormous effort. To the mentioned processes of the world economy are added the economy's internal problems: the tasks of the intensive phase of development that in themselves are not easy to solve, the permanent disequilibrium inherent in the economy's structure and in conjunction with this the shortages that have become chronic on the markets for capital goods as well as for consumer goods, the problems of quality whose solution is proceeding slowly, etc.

Renewal of the Economy as a Whole

In conjunction with this situation there might be different assessments, optimistic or pessimistic forecasts, and different interpretations of the causative factors. But all this does not alter the fact that, from the viewpoint of the possibilities for the Hungarian economy's further growth, this situation at the beginning of the 1980s is objectively given. Its solution demands a renewal of our view of the economy, a qualitative transformation of the entire mode of managing the economy and enterprise activity, a rapid change of the economy's structure, and simultaneously the creation of a new type of employee behavior. (This listing is by no means exhaustive because the same is true also of consumer habits, etc.) And the pressure of time regarding the problems to be solved is very great: we must start to remedy simultaneously almost every symptom and problem.

Extrication from the present situation, which has been caused by external and domestic factors jointly, will necessitate a renewal of the entire economy, and not merely changing one or another of its characteristics. In the course of this it will be necessary to solve also problems of a type that can hardly be described by one or another of the interpretations of innovation that have gained acceptance in the professional literature.

We come to the same coonclusion also if we approach the problem more narrowly, from the viewpoint of the innovation processes. If we regard innovation in the economy as processes of change in the applied engineering, technology and product design, embracing equally the phases of research, development, production and marketing, then also the integral link between the innovation processes and overall economic processes will become perceptible. In this context we may interpret the innovation processes, respectively their characteristics, as groups of symptoms that indicate the functional properties of the economy as a whole.

Whether we examine the individual elements of the innovation processes (for example, inventions, innovations) or the innovation processes as a whole, and thereby the economy's present innovative capacity, the Hungarian economy's innovation processes may be characterized by low efficiency and slow velocity. From this there follows the obvious conclusion that the mentioned characteristics of the innovation processes can be attributed to disturbances and shortcomings in the functioning of the economy. For just as the reduction of fever is symptomatic treatment and the fever can be relieved only by eliminating the causes of the disease, in the same manner the acceleration of the innovation processes requires, in addition to immediate partial measures, also a comprehensive change of the functioning of the economy. Otherwise the effectiveness of the partial measures will be only temporary, or at least very limited.

Interrelations of the Social Process

Thus whether we start out by the deductive method from the changes in the state of the world economy, of by the inductive method from the innovation processes, in both cases we arrive at the necesitty of the economy's renewal. It is essential to emphasize this because in this context we are able to interpret also the social factors that influence the innovation processes, primarily as the social factors of the economy's renewal.

Views to the effect that basically technological and/or economic factors determine the processes of technological development, or the innovation processes in general, still persist. But there is growing awarness of the fact that these processes are also social ones. Their social character indicates not only that a by no means insignificant proportion of the factors that trigger and influence these processes are of social origin, but also that the whole process itself is of a social nature. And the pertinent literature in economic history, economics and sociology unanimously agrees that the functioning of the economy as a whole, and the rearrangement taking place within it, cannot even be understood without a knowledge of the processes and relationships that assert themselves within society as a whole.

Within the present framework of discussion, therefore, I do not think that it is even necessary to substantiate in greater detail the social nature of the processes of the economy's renewal. I wish to prove instead that in the present state of the Hungarian economy social factors are of particular importance in terms of the rate, direction and effectiveness of the processes of the economy's renewal, that in several respects the success of the technological and economic renewal processes is primarily a function of the social processes unfolding in Hungary. Before expounding this, however, it will be expedient to briefly demonstrate the social character of the processes of economic renewal, and within them of the innovation processes.

The key element in the social nature of these processes is that they--just as all other processes--exist exclusively through and in human actions. The social nature manifests itself specifically in that the activity of man within the economy is socially determined. This determination may be formulated specifically as follows: human actions are determined by interests and cultural factors, regarding their nature as well as their content and direction. Nor can we overlook the fact that the processes within the economy are always also processes of a technological and/or economic nature. As a result of the role that social factors play in forming human actions, the assertion of the technological and economic factors is likewise socially determined.

Here I will disregard the fact that the roles of interests and of various cultural factors in forming human actions manifest themselves as partially interwoven, nor do I consider it my task to analyze in detail these two groups of factors. I will undertake to merely point out in each group those elements which, in my opinion, indicate the decisive role of the social factors in the processes of economic renewal.

Role of Interests

Participants in the economic process will of course strive to assert their own interests. The conflicts of interest stemming from the present differentiation of socialist society's basic conditions, and the reconciliation of these conflicts, are realized partially through the commodity-producing socialist economy's institutions--thus primarily through the market and its processes--and they partially occur in the activity of the various social groups and individuals within production.

The different interests result in different interest pursuits and, in pursuing their interests, the economically active strive to attain or preserve the state in which the prospects of asserting their interests are still acceptable (to use economic terminology, these prospects manifest themselves in the assertion of certain requirements of proportionality, in a definite relationship between the structures of supply and demand, in the level of work performances, etc.).

Renewal of the economic processes is a function of the renewal of the modes of human actions that realize these processes. But renewal occurs only if this is the most expedient or most feasible means of asserting the interests under the given conditions. The renewal capacity that the Hungarian economy demonstrated in the 1970s can be termed inadequate in comparison with the objective requirements. This resulted from the fact that the prospects of asserting the interests associated with renewal were relatively slight, and the interest pursuits of the economically active led them not to change but to preserve the existing conditions and processes. (The superficial manifestations of this were diverse. When there is a permanent discrepancy between the structures of supply and demand, changing the supply is the less fequented path. In its place there appear bribes, "putting the customer in his place," "explaining away" the situation, "blackmail ng" the central agency, the bargaining of increasingly convenient conditions, etc. Today the innovator's situation is still difficult, while that of the innovation-shy is convenient. While society's management and members are demanding innovation, the innovators' conditions of existnece are incentives against, and not for, innovation, etc.)

Moving from the present situation might affect favorably the interests of society as a whole, but the interests of significant social groups will be neglected, temporarily of permanently, or at least these social groups' prospects of asserting their interests will worsen. This leads directly to interest pursuits aimed at perpetuating the existing situation, at obstructing further progress.

I wish to illustrate all this--without any claim to completeness--in conjunction with several processes for whose promotion work programs have been drafted in recent years, at the highest levels of the management of society and of the economy.

--The measures to strengthen the normative nature of economic regulation are unfavorable to a wide circle of enterprises, because these enterprises are placed under conditions more rigorous than previously. Compliance with these measures can be expected only when efforts to "renegotiate" the conditions failed.

--The organizational changes already introduced or still planned at the highest level of the economy's management are detrimental to clearly discernible interests.

--The efforts to streamline the enterprises' organization, in the course of which certain organizational subdivisions will become independent and the enterprises' internal mechanism will be made more flexible, are expected to encounter opposition.

--Making the processes of technological development more dynamic will be detrimental to some workers in management and implementation (jobs might cease, workers might be reassigned, their prospects of professional advancement will worsen, etc.).

--As the processes of innovation become more dynamic, conflicts within enterprises will intensify. The renewal of enterprise activity will be accompanied by a rearrangement of the internal relations, and thus by changes in the situation of the affected personnel.

--The structural changes that are becoming unavoidable in the economy will necessitate redeployment of the affected manpower, which will alter in practically every essential respect the situation of these groups.

--Differentiation on the basis of performance will transform our practice of economic stimulation to date. This will affect unfavorably those who up to now enjoyed preferences, for other considerations.

--The changes in pricing and in the prices of goods and services will compel various population strata to make keenly felt adjustments in their life style and structure of consumption.

Conflict Situations

It is obvious, even without continuing the above listing, that it is in the interest of very significant social groups to prevent the unfolding of the outlined processes, and that the process of the economy's renewal leads to sharper conflicts of interest than previously, and thereby to the formation of certain types of conflicts. In itself, of course, this fact cannot serve as a yardstick for the changes to come, because a transformation of this type cannot be imagined without conflicts. The existence of conflicts merely indicates that the economy is alive and developing.

These potential--and to some extent already existing--sources of conflict assume decisive importance in the sense that they can be either unavoidable concomitants of development or obstacles to the process of renewal. Which of these roles they will play will depend primarily on our society's ability to cope with these conflicts. In other words, the process of economic renewal will test society's conflict tolerance and its ability to resolve conflicts. If society proves unable to resolve the arising conflicts--to partially offset, prevent or alleviate them--then the price society will have to pay will be a sudden halt of the process of renewal or its slowdown to a rate that would be intolerable amidst the present processes of the world economy.

To illustrate this I will dwell in greater detail on only one of the possible sources of conflict, namely on the redeployment of manpower that is becoming necessary. It is indisputable that the economy's structural transformation involves also the transformation of the manpower structure. In the course of this there arise very serious tasks that are by no means easy to solve: a reduction of the incomes already attained must be avoided if possible, and the retraining and re-employment of the affected workers must be ensured when necessary. At the given structure of the Hungarian economy, this inevitably demands the formation of conditions for more dynamic and easier regional mobility, etc. If to these problems we are unable to find solutions that satisfy the affected workers, our options will be narrowed considerably. We either encourage the redployment of manpower, risking by this that the erupting conflicts may assume intolerable dimensions under our socialist conditions; or we hamper the redeployment of manpower, and thereby also the structural rearrangement behind it. In the given example this is by no means a pseudo-problem, because adequate methods of solution could not develop under our socialist development to date, in the absence of practical experience with stepped-up manpower redeployment. To avoid these two options, therefore, we must develop also suitable institutional modes of solution. Or in more general terms: the processes of the economy's renewal are accompanied by conflicts that are more intensive than in the past and partially of a new type, and this demands of society greater conflict tolerance, and also the development of new modes of resolving conflicts, and new mechanisms for handling conflicts.

These tasks, however, do not belong exclusively or even primarily in the competence of the economy's management. The mechanisms for the resolution and handling of conflicts are necessarily formed by the processes of the system for society's management in the wider sense. Thus the processes of the economy's renewal require that the system and processes of society's management be adapted to the new situation.

The system of society's management at any given time is a part of socialism's political system. This leads to the natural conclusion that the demands for further development arising in the system and practice of society's management require further development of the entire political system.

Thus the decisive elements of the social conditions and processes that influence the process of the economy's renewal--primarily the movement of interests--manifest themselves on the contact surfaces of society's two exceptionally important subsystems: the economic subsystem, and the political subsystem. The economy's specific content is "absorbed" into the political system in the form of interest pursuits and conflicts of interest, while the political system's specific content is transmitted to the economy by political decisions linked to interests. The economic interests and interest pursuits affected by economic renewal appear also as political interests and interest pursuits. (This, of course, does not occur in the case of each and every economic interest. In the case of interests associated with the processes that affect most strongly the situation of the economically active, however, this is already standard practice, and there are constant efforts to transfer into the political system also the less essential elements of interest.) Transformed into political will, these interests react also on the processes of economic renewal themselves. (In the time that has elapsed since the reform of the system for managing the economy, this meachanism has clearly manifested itself in the so-called "bargaining over regulators" between the enterprises and the institutions of state control, etc.).

The fact that the top-level organs of political and economic management are striving very decisively to improve the economy's renovative capacity is at present a definitely favorable factor in the relationship between the political system as a whole and the processes of economic renewal, a factor that strongly encourages renewal. As a social subsystem, however, the political system naturally embraces significantly broader processes than its top-level managing activity, and thus top-level management is a very essential, but not the sole, determinant of the processes taking place within the political system.

The political system is internally divided by various institutions and organizations. This internal structural division influences how the interests existing in the economy are transformed into political will and, in the course of this, how the various interests and interest pursuits are reconciled, respectively what the mechanism will be for the resolution of the conflicts that arise when the different interests clash. The new situation that can be expected to arise as the processes of the economy's renewal unfold will strongly influence the functioning of the system of institutions formed under the previous conditions. And as we have already mentioned earlier, the given state of the system of institutions might also slow down the processes of renewal. Thus the effect that the political system as a whole has on the processes of economic renewal is a function of the development of the system of institutions.

The institutions (economic management's system of organizations, etc.) that form the mechanism linking together the political and the economic subsystem exist for the most in specific organizations. Interests tending to hamper the processes of renewal could penetrate this system of organizations (naturally these organizations are not independent of their socio-economic environment); the own interests of these organizations may be interwoven with the interests of the economic units; and the conflicts of interest arising between or within organizations likewise can be factors hampering the processes of the economy's renewal. But these processes also can be accelerated if the meeting or the conflict of different interest pursuits reduces the prospects of the assertion of the interests aimed at perpetuating the existing situation. This will depend, among other things, on the characteristics of the relations within the system of organizations, and on the decisive nature of the relations between organizations.

Investigations into the influence that individual elements of the political system have upon the economic processes have been underway for some time, and during the past 18 months there have also been changes affecting primarily economic management's system of organizations. The purpose of these changes was, among other things, to form more effective modes of uncovering and reconciling interests. Success of the efforts to perfect state government and economic management--specifically in the light of the foregoing--could contribute significantly toward the unfolding of the processes of the economy's renewal. Since the measures that already have been or will be introduced will also represent progress toward making management more democratic, we do not regard as far-fetched the views that the further unfolding of democracy in social and economic life could significantly stimulate also the processes of the economy's renewal.

At the same time we cannot neglect the political system's other effects on human actions. Thus the solutions employed in economic management--for example, the mode and extent of centralization, the employed modes of regulation, etc.--favor the emergence and viability of certain action strategies, respectively they prevent or hamper other action strategies. Partially under the influence of the characteristics of management, there are being formed manager, subordinate, researcher and employee behaviors that are being adopted successfully under the given conditions. Since the processes of the economy exist in behaviors and actions determined in this manner, also the rate, extent, direction and content of renewal will depend in part on whether the action strategies regarded as successful will remain the same under the altered conditions or will they, too, be forced to undergo change (and if so, in what direction). Of course, character traits, aptitude, inclinations, fields of interest and other highly individual characteristics, as well as circumstances, likewise play a role in the action strategies of individuals. Various cultural factors also play a role in these strategies. And although we have not fully explored the influence of interests on the processes of renewal, at this point it seems expedient to return to the cultural factors.

Distortions in the System of Values

The relationship between interests that shape human actions and the economy's innovative capacity is not so readily recognizable, because the interests and interest relations that form the action strategies may obscure its role. Yet the values that have been laid down as historical experience designate the most important objectives of human action, and the patterns of action and behavior that can be followed to attain these objectives. The various human communities reward behaviors conforming to values, and punish deviations from them. Thereby the content of values partially determines to what extent the workers strive to produce new things and series of actions, and it partially influences also how new ideas, unusual proposals, programs, strategies, views and approaches are received.

From the extensive world of values I will single out on this occasion only those distortions of the system of values which, in my opinion, hamper our progress the most: the so-called "egalitarian" attitude. This attitude is based on several value distortions.

1. One distortion manifests itself in the miscomception that incomes not commensurate with the work performed can exist only "upward," i.e., that there are only overpaid, but not underpaid, individuals and groups. Here the expression "not commensurate with the work performed" appears as a synonym of "unjustifiably high." Moreover, this misconception presupposes, explicitly or implicitly, that the incomes commensurate with the work

performed can be determined exactly in every case. Strictly speaking, however, it is possible--but not always easy--to determine whether or not the source of income is work, and relatively exact comparisons are feasible only in the case of activities of the same kind. But if the activities differ (for example, skilled worker and engineer, or lathe operator and coal miner), then the income ratios are only relative, and historically also variable.

2. Valuation of the social function of work has been distorted; the quantity and quality of the work performed are regarded as things of the same kind, i.e., more work = better work. According to an extreme variant, a new idea easily arrived at is not work at all. And since usually--but not always--the quality of the work performed can be determined less exactly than the quantity, quality is belittled.

3. Faulty moralization in the evaluation of activity: those who have done everything in their power deserve equal pay, because their intentions are the decisive. In other words, individual commitment to one's duty is confused here with the social value of the work performed. Equal effort = = equal wages and equal nonmaterial recognition.

4. Recognition of individual performances is confused with individualism: to boost the collective's morale, performances are credited to the collective even when they were achieved individually. This is based on the misconception that individual performances for the welfare of large or small collectives are of a collective nature, and that collectives may be formed even when the individuals working for them do not fare well.

5. New, progressive activity is underrated: the outstanding performance is not important, and stability is more valuable than progress. According to an extreme variant, rapid progress is poison that must be eliminated, and the person who seeks other solutions is undermining the collective.

These distortions of our system of values stem from the peculiarities of our development to date: the political and ideological distortions in the initial period of building socialism, the earlier set of conditions for economic activity and their shortcomings, the slow rate of technological development--all these are contributing factors. The consequences of our earlier historical development, which still persist as remnants in our views and system of values, must not be underestimated (late industrialization, the backward conditions of peasant farming, etc.). Even today they are fairly widespread and sufficiently deep-rooted to be regarded as factors that significantly retard our further progress. Because of the nature of value changes, their change and transformation is a relatively slow process that is not free of conflicts. Their transformation will test society's conflict tolerance, just as the relationship between interests and the processes of the economy's renewal will test it.

Due to space limitations, I have only been able to highlight the series of social factors that influence the processes of the economy's renewal. But perhaps even this will suffice to convey my conviction that progress is at least as much a social problem as it is a technological and economic problem. As a result of the economy's broad social setting, the social obstacles to the processes of renewal are at least as great as the technological or economic obstacles. Therefore the change or development of our society's present state is both a prerequisite for, and a consequence of, the processes of economic renewal. Particularly important in this situation is the extent to which we are in control of not only our economic, but also of our social processes in the wider sense. On this will depend our ability to undergo change.

However, many areas of the specific ways in which the economic and social processes are interwoven, and of their action mechanisms, are still unexplored. Thus there is a strong challenge to the sicences concerned to cover the borderline areas of the economy and society. The path that the economy must follow will unquestionably accelerate progress in the sciences concerned and will perhaps bring about (or compel) also their internal renewal.

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MAV'S DEVELOPMENT IN SIXTH FIVE-YEAR PLAN DESCRIBED

Budapest KOZLEKEDES TUDOMANYI SZEMLE in Hungarian No 5, May 81 pp 189-193

[Article by Zoltan Szucs, director general of MAV (Hungarian State Railways): "Main Directions of Railroad's Growth During the Sixth Five-Year Plan"]

[Text] The 1980 winter session of the National Assembly approved the law defining the national Sixth Five-Year Plan. The plan's basic interrelationships--especially the relationship between economic growth rate and economic equilibrium, and between investments and technical growth, and the plan's goals--in practice determine the tasks and the main directions of growth in the transportation-communication branch and the railroads within it. In the interest of defining these more clearly, it will be practical to first review some of the most important characteristics of the railroad's Fifth Five-Year Plan which ended in 1980.

The unfavorable worldwide economic trends which also significantly affected the growth of our national economy, were already known when the Fifth Five-Year Plan was being prepared. Even though the principles of our national economic policy correctly expressed the requirements of conforming to the new situation, the usual old practices no longer suitable under the new circumstances still prevailed in judging the economic performance. This is also reflected in the railroad's transportation plans which in retrospect can be considered optimistic, and which set the freight transportation volume at 677 to 700 million tons. Even though the amount of freight transported during the Fifth Five-Year Plan surpassed by about 45 million tons the amount transported during the previous plan period, our performance was about 15 million tons and approximately 3 to 3.5 billion freight ton-kilometers less than the minimums set in the plan.

We had also set out passenger transportation goals too high; we transported about 300 million fewer passengers than the planned 1.7 billion; this is the same as the number of passengers transported in 1978. Even though our annual plans did expect a decrease in the number of passengers, each year this remained far below the plan.

Even though our performances remain below the specifications set in the Fifth Five-Year Plan, railroad transportation did fulfill the national economy's transportation needs and did not hinder the activities and operation of the national economy's other branches. The fact that during the plan's time period we spent the resources available to use in a concentrated manner and for the development of the most important areas, also played an important role in this.

We succeeded in making significant progress in the area of modernizing the railroad track network. At the cost of regrouping the available financial resources we completed the modernization of 1,700 kilometers of track and increased the length of dual trackage--even if not by much. As a result of the modernization the ratio of tracks built for axle loading of more than 200 kN [expansion unknown] has increased to about 63 percent of the total trackage.

We have completed electrification of about 110 more kilometers of track than originally planned. With this the length of electrified trackage increased to about 20 percent of the total railroad trackage by the end of the plan's time period. This track network handles over 50 percent of the operating freight ton-kilometer performance, and about one-third of the passenger train-kilometers.

Modernization and growth of the large railroad junctions and switching yards did not keep up with the track modernization. We did not succeed in making practically any other significant progress in this area than the improvements made in the Zahony district.

However, both the pulling and pulled vehicle parks improved significantly. During the plan period we put into service about 21 percent more electric locomotives and 9 percent more diesel locomotives than were planned. The ratio of modern locomotives surpasses 96 percent in the transportation performance. Within the pulling vehicle [locomotive] park the ratio of electric locomotives is about 16 percent, but the ratio of their share of the performance in terms of 100 gross ton-kilometers exceeds 50 percent.

To a large extent the reasonable use of the electric locomotive park consists of the fact that by the last year of the plan's time period the specific energy consumption per 100 etkm [gross ton-kilometers; gtkm] decreased from 45.2 MJ [megaJoules; 10^6 Joules] in 1975 to 31.7 MJ [in 1980], which is a significant factor in energy savings.

As a result of improving the freight car park, the railroad has a modern vehicle park which basically fulfills the freight transportation needs, even though there is a shortage of some special cars. Compared to 1975 the load capacity has increased by more than 25 percent, and the load capacity per car is 5 tons higher. Forty percent of the car park is less than 10 years old.

The seating capacity of the passenger car park is nearly 5.5 percent higher in 1980 than was in 1975. The ratio of four-axle cars has reached 90 percent. However, we were not successful in making appropriate progress in the area of increasing travel comfort: we were able to buy only a very small number of sleeper cars, cars in which the seats convert to cots, and buffet cars.

We made progress in equipping the tracks and the stations with modern safety and communication equipment. We have significantly overfulfilled the program of building lighted railway level crossing barriers for the safety of public road-railroad crossings.

We spent significant sums to improve the living- and working conditions of the railroad workers.

By regrouping the available resources as necessary, we have basically reached the development goals we made for the Fifth Five-Year Plan's time period. Even though some shortcomings did appear in certain areas, the railroad's capacity proved practically sufficient to solve the transportation tasks.

The main directions of railroad's growth during the time period of the Sixth Five-Year Plan will be determined basically by the tasks deriving from the national economy's general growth trends.

The plan law passed by the National Assembly in December 1980 determined 19 to 22 percent growth in industrial production, 11 to 14 percent increase in the production of the construction industry, 12 to 15 percent growth in the production of agricultural products during the time period of the Sixth Five-Year Plan. In accordance with this there will be a growth of 12 to 14 percent in the performance of freight transportation.

Based on the projected growth we expect about 4.5 percent increase in freight tonnage and nearly 8 percent growth in the freight ton-kilometer performance in the railroad's freight transportation compared to 1980. (In practical terms this means that the 138 million ton freight transportation plan for 1985 is only 1 million tons higher than the 1980 value--which we did not fulfill.) Thus we are planning a more modest, better founded performance growth. Taking into consideration that the plan law specifies 37 to 39 percent increase in exports, we are expecting a 23 percent increase in export shipments which is much higher than the average, and 16 percent increase in transient traffic.

In passenger transportation we took into consideration a practically stagnant number of about 280 million passengers per year, with a performance of about 14 billion passenger-kilometers. Within the total number of passengers we are planning for some increase primarily in intercity transportation within the country, based on a tendency in this direction which is already beginning to appear. The expected rise in the cost of individual transportation is also expected to have an effect in this direction.

Solving the transportation problems, even though it will not be an easy job, is not expected to present unsolvable problems, especially if we will use even more practically, more efficiently than before the development opportunities available to us during the plan's time period.

First place in the order of importance must be given to the developments aimed at modernizing the network also during the Sixth Five-Year Plan.

The plan expects to modernize 1,300 kms of track. This is not as high as the performance during the previous plan period, even though maintaining the earlier rate would have been justified. Material prices are higher, and the installation of more modern track structure elements (for example, flexible rail holding-down devices, 60 kg bypasses, etc.) are also more expensive. Due in part to the cut in growth resources and in part to the circumstance that between 1981 and 1985 the specific financial expenses for track modernization will have increased by 12 to 20 percent over the previous plan period, we will have to insure cost coverage for the track modernization jobs which are fundamental from the viewpoint of traffic safety even at the cost of deleting some optional projects--such as, for example, raised platforms, platform roofs, under- and overpasses, etc.

As a result of modernization projected in the plan, by 1985 it will be possible for vehicles with higher than 200 kN axle loading to travel on 70 percent of the trackage, and the length of trackage with less than 180 kN axle loading will decrease by about 3 percent. However, on several high traffic volume and important track sections and on a large number of track segments of lesser importance we will not be able to implement the needed modernizations; therefore smooth traffic will have to be insured by more maintenance and repair work.

Compared to the previous plan period we are making more progress in the area of bridge modernizations. In earlier years we were able to spend relatively less in this area; but during the Sixth Five-Year Plan the condition and obsolescence of several bridges repaired after World War II makes it impossible to further delay their rebuilding.

The large switching yards and junctions are increasingly becoming the bottlenecks in the network's transmitting capacity. During the last plan's time period we were unable to make basic changes in this situation. We made our greatest progress in the areas of improvements in the Zahony district and in the reconstruction of the Szolnok junction; we were practically unable to even touch the Budapest switching yards which have long been ripe for modernization. We will not be able to make greater improvements during the Sixth Five-Year Plan, either. We must concentrate our opportunities primarily on continuing or completing the most important developments already in progress. In accordance with this we will speed up the reconstruction of Budapest-Kelenfold [railroad station], the developments in progress in the Zahony district, and we will only be able to begin one major project, modernization of Budapest-Ferencvaros, the organizing yard for [Budapest-] Keleti [Eastern] railroad station. This situation will cause problems for us in the future also, which we will have to overcome with better organized work, more successful load relieving than we are doing now in Budapest's most overloaded organizing railroad yards, and by improving their manpower supply.

Continued electrification is a question of trackage improvement, and also of energy management. During the plan's time period we wish to introduce electric pullage on 280 kilometers of track. By electrifying the Kiskunfelegyhaza-Szeged line segment we will for the most part have completed the electrification of the most important lines of the network east of the Danube River. By modernizing and electrifying the Aszod-Vac line we will be creating a high capacity route which bypasses the Budapest stations in a northerly direction. By partial electrification of the Budapest-Kelenfold-Pecs main line we will begin electrification of those lines of the Transdanubian network which are ripe for it. Besides the generally more favorable costs of electrical operation the planned line electrification will make it possible to save 35,000 tons of diesel fuel per year. By implementing the planned program, in 1985 we will perform 57 percent of the transportation performance by electric pullage on 21 percent of the trackage.

During the plan period we will continue modernizing the railroad's vehicle park, maintaining its transport capacity required by its tasks.

Growth in this area was significantly higher during the Fifth Five-Year Plan than had been planned, and even now the railroad already essentially has the vehicle park it needs to handle the transportation tasks of the first year or two of the Sixth Five-Year Plan. Improvement of the vehicle park will be one of our important jobs also during the current plan period partly because the vehicles are gradually getting older and this makes it necessary to retire some of them, and because we will have to gradually replace some of the obsolete vehicles which are uneconomical to operate, and partly because we will improve the standards of passenger transportation and increase the ratio of specialized cars needed for the freight transportation jobs.

Basically we will improve and modernize our locomotive park by the purchase of model V-43 electric locomotives which have worked out well for us, and which even now form the backbone of our locomotive park. In addition to this model we will also buy--even if only a few--electric locomotives with 3,700 kW performance suitable to pull heavy express trains and high-load freight trains. The series V-44 electric switching engines have [recently] made their debut on our trackage in significant numbers as a new model. We want these to replace some of the diesel locomotives in switching service, which are more costly to operate. As far as diesel locomotives are concerned we plan to buy only some from the lower performance categories, the M-41 and M-47 series locomotives.

Thus the improvement of our pullage power is characterized basically by the purchase of various types of electric locomotives. The pulling performance ratios are also shifting in this direction: the performance of diesel operation will remain practically the same, while that of the electric operation will increase by 17 to 19 percent. Of the locomotive park's pulling capacity expressed in terms of kilowatts--the size of which will remain essentially at the present level--the performance of electric locomotives represents 76 percent, and diesel locomotives represent 24 percent; steam operation will be eliminated by the end of the plan period.

As a result of the planned improvements in the locomotive park, the corresponding shift in electric and diesel performance ratios, and of the traffic organization and operational measures taken, the specific energy consumption in passenger transportation is expected to decrease from 573.6 kJ [kiloJoules, 1,000 or 10^3 Joules] per passenger-kilometer to 393.5 kJ per passenger-kilometer, and in freight transportation from 456.9 kJ per atkm [freight ton-kilometer] to 340.0 kJ per atkm by the end of the plan period.

Improvement of the passenger railcar park is basically supposed to insure the technical conditions of improving the conditions of travel. Purchase of the planned nearly 350 passenger railcars will make it possible to retire the obsolete two-axle cars and to create a car park used in international traffic which will meet the international specifications both from the technical and comfort viewpoints. It will also provide the opportunity to rejuvenate the insufficient and largely obsolete sleeping car and buffet car parks with vehicles which satisfy the just expectations both with respect to comfort and the level of the services provided. About one-third of the total purchases will consist of cars built in the railroad's own facilities, and will basically provide service in the suburbs--in commuter traffic. As the end result of new purchases and the necessary retirements the number of passenger railcars will decrease by 2 percent, and seating capacity by less than one percent. But the eliminated seating capacity will be counterbalanced by more modern traffic organization, and by more frequent passenger train traffic between the high traffic density settlements, which anyway is also one of the important qualitative factors of railroad passenger transportation.

Freight car purchases will remain significantly below the purchases of the Fifth Five-Year Plan's time period. Our basic goal is to keep the number of cars in the freight car park unchanged by implementing a well-planned retirement policy. We will accomplish this in such a way that at the same time the freight car park's load capacity will also increase by about 2.5 percent. We will spend the budget available for improvement purposes mostly on purchases of special purpose cars. Better accommodation of the transportation tasks, and the use of technologically properly equipped cars for the special transportation tasks (for example, grain transporter and container transporter cars, etc.) are indispensible conditions for improving the services provided in the area of freight transportation. We wish to promote the increased use of modern transportation methods by improving our medium and large container inventory and by increasing the lifting and handling machinery park needed to operate them.

The basic changes in financing are a new feature in improving the vehicle park. While during the time period of the Fifth Five-Year Plan the improvement of the railroad's vehicle park was handled as a group-targeted investment by the state, in the current 5-year plan--due to the target group having been eliminated--vehicle purchases have to be planned among the other investments implemented by the enterprise's resources. This circumstance repeatedly points out that the enterprises shipping specialty products must take a greater part in the purchase of special cars, and these will be operated as private cars in the MAV's car park.

We consider traffic safety to continue as an issue of emphasized significance during the time period of the Sixth Five-Year Plan also. While protecting the safety of traffic, we will continue to install automatic line and station safety equipment which will also handle the job of regulating traffic, and will increase the traffic transmitting capacity of the lines. According to our preliminary calculations, by the end of the plan period about 70 percent of the main track network and about 60 percent of the stations on it will be equipped with modern safety equipment. We will also continue installing lighted crossing barriers at the railroad-public road crossings.

In addition to their effects of improving safety and increasing transmitting capacity, the above mentioned developments will also make it possible to save very significant amounts of manpower. They are preconditions for moving trains by just a locomotive operator, and they will make it possible to eliminate switch handler and crossing guard jobs.

We will continue building up the modern communication network which is indispensible in operating the railroad, and [we will continue] installing such equipment. We will help the job of operating the railroad and handling traffic by installing additional radio communication zones at the stations and on the lines. We will begin reconstruction of the railroad's automatic telephone switchboards, and continue the installation of carrier frequency equipment which will make it possible to derive multiple use from the communications cables. We are planning modest progress in the area of expanding the computer technology equipment, and in the broader use of their services. We will use the available financial resources primarily for supplementing the systems already in operation, to expand their services in the most necessary areas. We want to make progress in the area of having the machinery do the planning and controlling of the transportation process.

In addition to the expeditious use of the budgets made available for improving our fixed and revolving assets, the national economy's Sixth Five-Year Plan also specifies the better, more efficient use of our existing equipment, increasing their productivity, by means of perfecting the operating and work organizations. Besides the requirements defined in the plan, the circumstance that we are working with an extremely valuable fixed asset inventory, lends great significance to this at the railroad. (At the present time there are fixed assets in the value of over 1 million forints for each and every railroad employee.)

Improving the employment of the modern vehicle park is a fundamental question from the viewpoint of fully and efficiently solving the transportation tasks specified in the plan. Some of the more important methods which can improve the efficiency of operation, utilization of the vehicles, and increase the productivity of transportation work, are: improved utilization of the freight car park's load capacity; decreasing today's high car turnaround time of nearly 4 days; increasing the loading of freight trains; better utilization of the available pulling power; increasing the speed of freight forwarding; decreasing the loading and unloading times and the lost operating time (car, train and locomotive standing time) which is still high today.

Utilization of the railroad's fixed assets depends to a significant extent on organizing the technological process, and on the quantity of the available manpower. Besides the technical improvements, organization also had a significant role in solving the transportation tasks of the Fifth Five-Year Plan, and in the 5 to 7 percent increase of the productivity indices computed on the per full time employee basis. It is also largely responsible for the railroad carrying about 45 million tons more freight than in the previous plan period, while manpower gradually decreased during the plan's time period, by a total of about 10,000 employees by the end of 1980.

During the Sixth Five-Year Plan's time period we are expecting a further decrease of about 5,000 employees. Considering the circumstance that during the plan's time period the 5 day work week will become general in the national economy, we will have to make additional efforts to use the available manpower more efficiently because the transportation needs, and loading and unloading will become even more concentrated than they now are. We will have to pay more attention to organizing the operation, to working out and introducing new work systems, to decreasing the time losses, to develop and consistently apply new performance requirements and standards for the number of employees used [on jobs]. All this will have to be done in such a way that on the annual level the total number of working hours needed to do the work specified in the plan should decrease by about 15 million manhours, and the amount of overtime worked in 1980 [decreased] by 50 percent.

Keeping the manpower needed to do the job, and improving the living- and working conditions and social care of the railroad workers will continue to be tasks of emphasized importance for us. In the interest of cutting down on the heavy physical work and increasing the safety of persons and property, we will increase the mechanization of the loading-unloading work, material handling, as well as the maintenance and construction jobs during the plan's time period.

The goal of the labor protection improvements is to eliminate the injuries deriving from occupational hazards, primarily from the effects of dust, gas, heat and vibration, or to decrease these to such an extent that by 1985 such working conditions will be developed for most railroad jobs which do not harm people's health. We will increase the capacity of dressing rooms and washroom [shower] facilities by about 6,000 spaces.

The sum earmarked to maintain and operate the social and welfare facilities, and implement the improvement goals during the plan's time period, is almost as high as the sum used during the last plan period. When improving the network of child care facilities, in addition to the approximately 610 spaces planned for the Fifth Five-Year Plan but postponed, we will build an additional 400 spaces. In Budapest we will increase the number of available spaces in worker's hotels by 1,110 spaces. On the network level we will expand the number of spaces in worker's hotels by 400.

According to the plan law the transportation requirements must be satisfied while maintaining the already achieved quality standards. We consider this requirement to be the minimum. We can improve the standards of our services in a number of areas by better disciplined, more accurate and more circumspect work by discovering and exploiting the reserves still available to us, without additional expenditures.

We can--and must--do much in the area of passenger transportation both in the area of on-time service of the passenger trains, and in the area of travel comforts. The basic technical conditions for this are generally available on the lines with the busiest passenger service. The insufficiently cleaned railroad car, and the commuter or express train delayed often out of mere carelessness, are quality rejects the occurrance of which cannot be traced back to either manpower or technical reasons.

Better service to our customers is not always hindered by the actual shortage of railroad cars; the difficulties in making railroad cars available, which provide the reasons for many arguments, could very often be solved by more circumspect and better organized work. It is also true that while we can not provide empty cars for loading, the missing cars are standing perhaps right on the requesting enterprise's industrial siding, waiting to be unloaded. Thus improving the working relationship and cooperation with the shippers is a very important quality factor in our work.

With more uniform utilization of our limited transportation capacities we will be able to solve our transportation tasks planned for the Sixth Five-Year Plan. In the interest of this we will have to increasingly "meet the merchandise half way," and create the conditions for more accurately planning the shipments and organizing the traffic more efficiently by becoming involved in the production processes.

We do not consider acceptable the present level of commercial speeds, either. We can increase this (it had been higher than it is now)--even within our assured growth opportunities.

I intended the few issues I introduced only for examples. We still have opportunities in operations, and in all areas of the railroad's work to improve the quality standards we have already achieved, and successful implementation of our Sixth Five-Year Plan demands that we immediately take advantage of them.

8584
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MAJOR TARGETS OF 1981 SOCIOECONOMIC PLAN OUTLINED

Warsaw RADA NARODOWA GOSPODARKA ADMINISTRACJA in Polish No 2, 24 Jan 81 pp 20-21

[Article by Stanislaw Markowski: "Basic Premises of 1981 Socioeconomic Plan"--Passages enclosed in slantlines printed in boldface]

[Text] The 1981 National Socioeconomic Plan provides for the fulfillment of the following basic objectives:

/--adaptation of social policies to the currently principal needs; in particular, assurance of implementation of decisions adopted in 1980;

--stimulation of the development of agricultural production through an increase in deliveries of means of production to agriculture and provision of conditions encouraging all farmers to increase food output;

--gradual stabilization of monetary and market situation, with special consideration of the basic--especially food--needs of the population;

--bringing the investment situation into order by reducing overall outlays, adapting their structure to actual needs, and giving appropriate priorities to investment projects intended to increase production for the market and for exports;

--transforming the structure of industrial production in favor of the recently neglected production of consumer goods;

--prompting producers to intensify exports despite the difficult conditions while at the same time enhancing the profitability of exports;

--exploitation of latent potential and possibilities for increasing production and streamlining management on the basis of the opportunities afforded by changes in the planning and management system, development of self-government, and democratization of social and economic life./

Considering that the overall opportunities for increasing the share of the consumption fund in national income in 1981 are extremely limited, as they amount to barely 0.4 percent, steps will be taken to protect the living standards of the population and family groups which exist in the most difficult material situation or which deserve special care by society. This manifests itself in, among other things, the increase of 25 percent, or more than 56 billion zlotys, in all sorts of social benefits, including an increase of nearly 30 percent or about 45 billion zlotys in old-age and other pensions. The wage fund will increase by about 150 billion zlotys, or by nearly 16 percent, while the income of farmers from sales of agricultural produce units of socialized economy will increase by nearly 63 billion zlotys or about 24 percent. The plan provides that /in 1981 the increase in the nation's monetary income will total about 290 billion zlotys or about 18 percent./

This is a tremendous increase in the cash income of the population, considering the previous background. Such a scale of increase may threaten a worsening of the manifestations of inflation. To reduce the attendant dangers the Socioeconomic Plan provides for the adoption of various steps to restrict the purchasing power of the population.

The Decisive Importance of an Increase in Market Supplies

The assurance of a marked increase in the supply of market goods will be of decisive importance. This, however, is a difficult and complex task, because the decline in agricultural production is resulting in a decrease in the supply of many important foodstuffs, especially of meat and sugar, with the aggregate shortfall amounting to 30 billion zlotys. Hence it is essential to implement the plan targets envisaging an increase in the supply of other foodstuffs and manufactured goods.

/The aggregate increase in domestic market supply in 1981 will be about 34 billion zlotys./ At the same time, individual economic organizations were obligated to exploit all available potential for increasing the supply of goods in demand. This should be accomplished through an improved utilization of production capacities, the conversion of industrial plants producing investment goods to the production of consumer goods, the intensification of production for the market by small-scale industry, the exploitation of local raw materials and local potential for the processing of agricultural products, and the utilization of inactive facilities, machinery, and equipment for the production of consumer goods.

To satisfy the basic needs of society as regards the production of manufactured consumer goods, whose supply is to increase by about 6 percent, principal attention will be focused on staple goods while at the same time the supply of luxury goods will be reduced.

Of great importance also will be the supply of means of agricultural production and building materials, both to the rural market and to the urban inhabitants. The aggregate supply of all non-consumer industrial goods will be about 7 percent greater than in 1980.

The expansion of services to the population by units of the socialized economy is specified at about 5 percent in the plan; including services by handicraft industry and other nonsocialized units, this item reaches 6.7 percent.

Beginning of a Long-Range Process of Agricultural Development

Agriculture is of basic strategic importance to the nation's further economic development--and especially to improvements in the food situation and to reducing the difficulties associated with day-by-day purchases by the population. The ability of agriculture to rapidly surmount the catastrophic consequences of the bad harvest of 1980 is in this context just as important.

It is estimated that in 1981 overall agricultural output will have increased by nearly 8 percent. This estimate is based on the assumption that in 1981 agricultural output will again attain its 1979 level (which though will require a 25-percent increase in output compared with 1980), but that meat output will continue to be lower.

/To attain the planned level of output and initiate the long-term process of agricultural development, the following steps are envisaged:

--provision of conditions favoring a broad productive activization of all farms, especially of private farms, through an increase in their supply of means of production as well as through appropriate price policies as regards agricultural produce and means of production, and also through appropriate credit policies;

--implementation of a broad variety of measures to improve the efficiency of production in socialized farms;

--active efforts to counteract the decrease in the livestock herds owing to fodder shortages;

--improved utilization of arable land for agricultural purposes and restrictions on using land for non-agricultural purposes;

--increased supervision of the accuracy of estimates of quantity and quality of the procurements of agricultural produce and livestock, and counteracting of wasteful procurements, transport, and processing;

--development of rural self-government, especially among agricultural circles and agricultural cooperatives./

The improved supply of means of production to agriculture will be reflected in an increase in the amount of artificial fertilizers per hectare of arable land--from 190 kg in 1980 to 200 kg in 1981. Fertilizer supplies to private farms will increase markedly so as to reduce the marked discrepancy in this respect between private and socialized farms. The supply of tractors and agricultural machinery and implements will increase by about 10 percent--of which the supply to private farms alone will increase by more than 20 percent.

Change in Investment Policies

An analysis of the limited possibilities for the supply of raw and other materials, fuels and energy, resulted in setting the level of industrial output in the 1981 Socioeconomic Plan close to the level achieved in 1980. This assumption is based on the anticipated decline in the output of the extractive industries and the food industry, which produces consumer goods and means of production for agriculture, will increase.

This will represent a consistent fulfillment of the important task of changing the structure of industrial production in favor of consumer and export goods while at the same time limiting production for investment purposes. Types of production marked by high energy and material requirements also will be restricted. Considering that the national income created in 1981 will most likely be somewhat below its 1980 level, the allocation of resources for protecting the living standards of persons at the lowest subsistence levels and the provision of conditions facilitating a strengthening of the nation's economic equilibrium require a marked restriction of investment outlays and a change in directions of investment.

In 1981 investment outlays will be reduced by about 90 billion zlotys compared with 1980, which means a decline to 535 billion zlotys, i.e. by nearly 15 percent. This will reduce the burden of investments on national income from about 19 percent in 1980 to about 14 percent. /The investment restrictions will chiefly consist of halting a number of industrial investment projects, especially the major projects, with a low degree of implementation and a long construction cycle, as well as in discontinuing the construction of many administrative buildings. At the same time, the share of investment outlays on agriculture, food industry, housing construction, utilities, public health, and education will increase./

In 1981 about 250,000 dwelling units with a useful area of more than 15 million square meters should be released for occupancy--this includes about 200,000 dwelling units with a useful area of about 10.4 million square meters built by socialized construction. Housing construction done by cooperatives will reach about 160,000 dwelling units to be allocated chiefly for the cooperative members with long waiting periods for housing.

The limitation and concentration of investment activities will provide favorable conditions for streamlining the organization and functioning of construction. This should be reflected in a smooth fulfillment of tasks and improved quality of implementation, which will also make it possible to focus more attention than previously on preparing land and installing utility lines for post-1981 housing construction.

Broader Cooperation With CEMA Countries

Factors that markedly affect the degree of freedom of economic activity include the high foreign indebtedness, which toward the end of 1980 amounted to approximately U.S. $23 billion in convertible currencies. It is thus necessary to take steps to exploit every potential for increasing exports, insofar as this does not aggravate the problems of the domestic market.

At the same time, the plan postulates that in 1981 it will be possible to further restrict imports by about 3 percent--among other things, through a reduction of about 10 percent in investment imports. This, together with an increase in exports, should serve to improve the foreign trade balance by about 1.5 billion hard-currency zlotys.

Of major importance to surmounting the present economic difficulties will be the expansion and deepening of economic cooperation with the CEMA countries and especially with the Soviet Union.

The Needs of Society as the Principal Reference Point of Action

Discussion of the basic tasks of the 1981 plan merits emphasis because, /despite the nation's known extremely difficult economic situation, attention is focused to a much greater extent than in recent years, wherever possible, on an improved satisfaction of the broadly conceived needs of society.

This is reflected not only in the expansion of housing construction, but also in the marked increase in resources allocated for the development of the material base for the entire sociocultural sphere./

/Public health outlays in 1981 will reach about 127 billion zlotys,/ i.e. 27 percent more than in 1980. The number of hospital beds will reach 213,000, a 4.2 percent increase. To reduce the keenly felt shortage of drugs, their supplies will be increased by more than 12 percent. The number of vacancies in creches will reach 114,000, a 7.4 percent increase.

/The outlays on elementary and higher education will total about 114 billion zlotys,/ i.e. 15 percent more than in 1980. The number of preschool vacancies for children will reach 1.3 million, a 4.6 percent increase, and the number of vacancies in student hostels, 130,000, or a 1.1 percent increase.

/The outlays on culture and the arts, including the radio and television, will exceed 19 billion zlotys in 1981,/ an increase of about 15 percent. Considering the justified public criticisms, the plan provides for a 9-percent increase in allocations of paper for publishing purposes.

1386
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PROBLEMS EXAMINED, IMPROVEMENTS SUGGESTED IN FORESTRY AREA

Bucharest REVISTA ECONOMICA in Romanian Nos 21-22; 22, 29 May 81

/Article by Vasile Boescu and Bogdan Padure: "Better Utilization of Timber" (Parts I and II)/

/22 May 81 pp 2-3, 10/

/Text/ Wood has a leading place among the raw materials that are of particular significance in supplying a large number of sectors and enterprises of the national economy. Consequently, wood, like all raw materials in fact, must be managed rationally and efficiently throughout the circuit of its extraction, processing and utilization, so that, under conditions of high efficiency, a larger volume of products may be obtained from the same quantity of timber.

The raising of the stock of timber meant for industrial processing to the level of the growing needs of the national economy, under the conditions in which the cutting is limited--as is stipulated in the Directives and Program for Conservation and Utilization of the Country's Forest Resources up to the Year 2010--requires special organizational measures in the operations with regard to gathering, sorting and utilizing fully through suitable technologies the entire forest resources on the areas planned to be exploited. What actions are the forestry enterprises performing in order to exploit and utilize the wood in the forest as efficiently as possible, how are they providing for the delivery of industrial wood to customers so that the plan provisions in the lumber camps and the processing units may be steadily fulfilled quantitatively and qualitatively?

Significant Achievements But Also Reserves That Must Be Promptly Utilized

The transition to the fulfillment of the 1981 plan targets found the enterprises of the Central for Exploitation and Transportation of Wood in an extremely favorable position: all the plan provisions for the preceding 5-year period were not only fulfilled but also overfulfilled. An extra quantity of industrial wood valued at tens of millions of lei was furnished to the national economy.

Possessing valuable experience and a mobilizing program for the new 5-year period, the logging enterprises took steps early to also get good results this year in fulfilling the plan targets. This required, first of all, that a large quantity of wood be cut, sorted and brought to the access roads, so that under spring conditions it could be easily delivered to customers. On 1 January 1981, for instance, over 2 million cubic meters of industrial wood were in stock, ready for delivery. Considering that for the whole year the quantity of wood from the country's forests that must be cut and furnished to the national economy comes to 20 million cubic meters, the necessary steps have been taken so that the planned quantities for each assortment may be achieved from each felling area. One should note the fact that at the end of the first quarter of 1981 the majority of the enterprises in the central managed to fulfill their plan targets both for commodity output and net output and for the qualitative and efficiency indicators. For example, the forestry enterprises for exploitation and transportation /IFET's/ in Suceava, Pitesti, Piatra Neamt, Rimnicu Vilcea and Miercurea Ciuc fulfilled their plan for commodity output between 101-103 percent, net output between 101-123 percent and labor productivity between 100-107 percent, the level of the total expenses per 1,000 lei of commodity output lay between 99.8 and 100 percent, and so on.

However, the situation in the central as a whole does not come up to the level of the plan provisions. This is because a number of units with a large percentage in fulfilling the plan targets did not manage to extract and deliver the planned quantities of industrial wood. Among them are the Caransebes, Bacau, Baia Mare, Sibiu and Tirgu Jiu IFET's, which fulfilled the plan for the commodity-output and net-output indicators only at levels lying between 77 and 92 percent in the first 2 months of 1981. In March, April and May, however, the above-mentioned units have managed to comply with the plan provisions and to make up the arrears, with the enterprises in Caransebes and Sibiu being exceptions.

However, what constitutes a shortcoming with negative effects in a chain reaction is the failure to fulfill at the planned level the obligations in economic contracts: at the central's level the provisions for all of the first quarter of this year were fulfilled only on a scale of 91.9 percent. Most unhonored contracts included certain assortments of industrial wood, namely beech logs (-39.5 percent), coniferous logs (-13.3 percent), pitwood (-45.0 percent), coniferous lumber (-17.9 percent) and beech lumber (-35.6 percent). For the other assortments (oak veneer logs, pulpwood, oak lumber, lumber of various species, hardwood boxes, French windows, normal and special railroad ties, beech barrels and containers), the provisions in the contracts were honored completely and, in many cases, in advance. In April and May, the wood deliveries have increased greatly, with the provisions in the economic contracts being fulfilled to a greater extent.

The deficiencies that appeared in the activity of the forestry enterprises are due to causes of an objective nature (we have in mind the hard winter this year, the bad weather lasting for long periods, especially in the mountain zones, and so on), but also to shortcomings of their own--that is, to the way in which the transportation of wood (both with their own means and with those of the CFR /Romanian railroads/) from the forest to the customer was planned and done, to difficulties in supplying motor fuel and tires, and so on. Naturally, if such shortcomings had not appeared, if the reserves of stock had been transported and delivered to customers, it would not have happened that some wood-industrialization enterprises lacked raw material and, in their turn, did not fulfill their production plan for the main indicators in the first months of this year.

Nevertheless, we feel that valuable experience that is worth noting has been accumulated within the Central for Exploitation of Wood, that the actions taken in March, April and May of this year (both by the central and by the units that belong to it) were and are of a nature to make up much of the lags with regard to fulfilling the production and delivery plan, that, moreover, there are conditions so that, on the whole, the targets, plus the pledges made, may be steadily fulfilled quantitatively and qualitatively. This is why, in what follows, besides presenting the positive results obtained by many IFET's, we intend to also point out a number of reserves that can be more actively mobilized, as well as the possible actions to take in order to increase the capacity of the central and its units to exemplarily fulfill the 1981 plan for all indicators.

Improvement in Technology and in Organization--Sources of Growth in Production and in Efficiency

In the entire activity of exploitation and better utilization of timber, considerable efforts have been and are being made consistently in the direction of modernizing the work technologies and improving the organization of production and labor, which has permitted the obtaining of better results along the line of increasing both the volume of production and the level of efficiency. In this regard, programs of complex measures at the level of the industrial central and the component forestry enterprises for exploitation and transportation have been drawn up for the 5-year period, with a layout for each year, in order to meet the needs of the national economy from a volume of cutting limited to the normal possibility of the forest, to increase the labor productivity and lessen the physical effort, to reduce the production costs, especially the material and energy ones, along with increasing the proportion of wood resulting from thinning and clearing the forest. Of the multitude of concerns and of results obtained in this regard, there should be mentioned, above all, those referring to:

1. The introduction and expansion of modern technologies in all phases of the wood-exploitation process:

In the harvesting operations, the activity done in a mechanized fashion has risen from 14.7 percent in 1960 to 99.4 percent in 1981, especially through the wide utilization of power saws;

In the gathering operations, mechanized activity was undertaken along with the growth of the volume and assortments of deciduous wood needed for industrialization, in order to provide for rapid removal of the wood from the felling areas and for compliance with the silvicultural rules for protecting the forest in the vegetative period, as well as to increase the volume of exploitable timber (under the conditions of unmechanized labor, about 1.2 million cubic meters in the form of branches and unsplit trunks remained in the forest). The utilization of cable installations (cableway skidders) and tractors has led to the growth of the mechanization index for this category of work from 15.7 percent in 1960 to 81 percent at present, as well as the substantial reduction of timber losses;

In the operations of loading the wood onto means of transportation, the percentage of manual labor has fallen from 96 percent in 1960 to only 7 percent in 1981. In the past, the manual performance of the loading operation made it necessary for most of the timber that was shipped from the forest to consist of split wood (with an and (small consumption of labor), in order to be relatively easy to handle manually. In addition, the quantity of logs handled was smaller and, in order to load them, ramps that required big consumptions of high-quality wood were built;

In transportation, the percentage of operations done with the mechanized means of the forestry units has risen from 72 percent in 1960 to 100 percent this year. This was possible due to the expansion of the network of forest roads. Conditions were thus created for circulation to also be possible on slopes of up to 12 percent (as compared with only 6 percent on the railroad), for reducing the investment costs (300,000 lei per km of road, as compared with 1.10 million lei per km of railroad) and for reducing the consumption of materials (a consumption of only 1 ton of metal material and 1 cubic meter of wood material per km of road, as compared with 50 tons of metal material and 58 cubic meters of wood material per km of railroad) and the operating costs (1.04 lei per ton-km in automotive transportation, as comp red with [illegible] lei per ton-km in railroad transportation in 1980).

The rise in the degree of mechanization in the felling areas also led to the growth of labor productivity from 0.640 cubic meters per man-day in 1950 to 2.300 cubic meters per man-day achieved in 1980. On this basis, the number of workers used in logging has fallen continually, amounting now to about 50 percent of that in 1950, a reduction achieved particularly in the felling, trimming and gathering of wood in the phases that require great physical effort.

2. The concentration of the means of production and the available work force at a low number of simultaneous operations. The necessity of such an action was caused by the fact that up to now over 4,000 felling areas were tackled simultaneously, which led to the dispersion of the production potential over an excessively wide work front and, for this reason, to the impossibility of supervising the performance of the technological operations, to difficulties in providing the necessary technical assistance at the proper time, to the reduction of labor productivity and efficiency. At present, on the basis of thorough studies performed for a long period, the concentration of the work front at 2,000 felling areas in simultaneous operation has been undertaken. This year, such a mode of working is resulting in the reduction of the periods for clearing the felling areas, the growth of the quality of the technical assistance given, the providing of the inactivity needed for the regeneration and conservation of forest resources, and significant premises for growth in labor productivity. From the experiments performed in this regard since the start of the year, it results that a rise in labor productivity from 2 cubic meters per man-day in past years to over 2.5 cubic meters per man-day at present and a substantial drop in production costs are obtained.

3. Specialized preparations for the work, in advance of the plan period. In this manner, many concerns along the line of preparing for production, materialized in specifying all the work and in establishing the silvicultural restrictions, the nature of the products harvested, the type of cutting and the level of the stocks to achieve for providing continuity to the work and the deliveries, are manifested as early as the fourth quarter of the year prior to the plan year. At the same time, the preparatory action also encompasses the performance of the preliminary technological work, such as the construction of cable installations and access roads along the logging route, the achievement of minor arrangements needed for the primary platforms, and so on.

What should be noted is the fact that the making of specialized preparations for production by crews of specialists organized and intended to perform this category of work has now been undertaken. While the preparations were made more or less empirically up to now, by those who also did the cutting, beginning with this year three to four preparatory crews specializing in the performance of this category of work have been formed within each forestry enterprise for exploitation and transportation, which permits, according to the experiments performed, a rise of about 15 percent in labor productivity in logging and substantial reductions in the periods for doing the technological work.

4. The shifting of the center of gravity of the technological operations that are big consumers of manpower from the felling areas to preindustrialization centers (for sorting and utilization of timber). The founding of these production units permits the mechanized performance of the wood-handling operations, as well as the growth of the degree of utilization of timber. At the same time, within them, in addition to the mechanized sorting of wood in long pieces (not bucked in the felling areas), the parts at the base of the trees, which were not utilized previously, or the portions with defects, which are split in a mechanized fashion, are also handled in a mechanized fashion with the help of conveyors. They are then oriented, depending on the main characteristics, toward the production of cellulose, chipboard, distillates, tanning agents, small containers for semiproducts and firewood. What is to be noted is the fact that, at the same time, within them there is also created the favorable organizational framework for increasing the degree of utilization of wood by 20-25 lei per cubic meter (through the existence within them of shops for industrialization of thin, inferior and small pieces of wood), as well as for expanding the typification of the technological processing lines.

Since four to five such centers have been founded thus far in Pingarati (Neamt), Moldovita (Suceava), Telega (Prahova), Stilpeni (Arges) and Baboni (Vilcea), where excellent results have been obtained along the line of raising the timber-utilization index from 70-75 percent to 80-85 percent (wood for industrial uses), increasing the labor productivity, lightening the physical labor and so on, an increase in the efforts in other areas of action of the industrial central also seems necessary, in order to increase the promptness with which action is taken to expand this advanced experience, to found such centers, so that the number of them reaches the figure of 200 as rapidly as possible, in conformity with the provisions in the programs drawn up.

In order to increase the volume of wood exploited under conditions of greater efficiency, where conditions for expanding this method do not yet exist, the enterprises for exploitation and transportation must intensify the supervision regarding compliance with the estimates for the work involving wood occasioned by the removal and transportation of timber, as well as compliance with the technological instructions and the internal standards and norms concerning all the work in the logging operations, the height of the tree-cutting quotas, the extra length that is allowed for the trimmed assortments and the quality and dimensions of the timber used in the specific work in the forest (ramps, chutes and so on).

[29 May 81 pp 3-4]

[Text] Continual improvement of the activity of exploitation and utilization of wood is of particular significance to the whole national economy, both in order to meet the need for raw material for the processing industry and in order to satisfy at a higher and higher level with wood products the domestic requirements and those for exportation. For this reason, the efforts of all the factors involved must be oriented toward the rational exploitation of timber and the steady delivery of it to customers.

As we related in the preceding article (REVISTA ECONOMICA, No 21, 1981), the contracts concluded between the units of the Central for Exploitation of Wood and its various customers were not honored completely in the first part of this year, due to the insufficient reserves of wood cut and brought to the accessible places for automotive transportation or on the railroad and the nonutilization of potential reserves of wood in the forest. In this framework, we continue the analysis made by our periodical regarding the problems of rationally exploiting and efficiently utilizing the wood in the forest with a presentation of the main methods of drawing into the economic circuit the large reserves available.

The Production Capacities--Utilized Better

The use of the technological equipment on hand at higher indices represents one of the big internal reserves for growth in production in the logging units--with both the quantity of wood cut, gathered and selected and its transportation to the preindustrialization units or directly to the customer depending on its level. The deficiencies existing in this field in the first quarter of 1981 had significant negative effects, manifested in insufficient utilization of the wood resources in the forest.

In view of the nature of these shortcomings, the concerns of the factors involved will have to pursue, above all, the matter of solving as rapidly and efficiently as possible the problems connected with improving the organization of the activity of maintaining and repairing the stock of technological equipment on hand, whose unsuitable performance caused the time that it was idle to exceed the provisions, with significant losses in capacity: 5 percent for cableway skidders, 3-4 percent for tractors, 5-6 percent for forest machines and motor trains, and so on. In this context, it is necessary to increase the promptness and efficiency with which a number of actions are performed, of which we mention: the execution of snow removal and the repair and preparation of the roads in and after the winter period; the providing of the allocated stocks of spare parts in correlation with the timetables for maintenance and repairs (especially on power saws, tractors and so on); the organization of the second shift for the removal and especially the transportation of wood (only 25 percent of the total transportation fleet available operates in this fashion at present); the growth of the regularity in furnishing a number of indispensable supplies for the means on hand (oil, hydraulic driving installations and various engine parts), for which the required quotas are not provided at the level of the need determined on the basis of consumption standards; and so on.

At the same time, it is necessary to make up the delays in recruiting the work force, manifested particularly at the start of the year, which had as a direct result the failure to utilize at the planned indices the technological equipment on hand, stoppages in the technological flow and insufficient fulfillment of the planned production targets especially at the Caransebes, Tirgu Jiu and Sibiu IFET's, and so on. The concerns of the respective units for the expansion of mechanization and the improvement of the organization of production and labor must be intensified in order to compensate for the effects of this shortcoming. However, it is just as important to increase the efficiency of the actions of recruiting the work force, of continually improving the social conditions in the lumber camps and of substantially increasing the productivity of the existing workers. In this context, it is of particular importance, on the one hand, to expand the overall contract system, for which possibilities of an increase of over 15 percent exist this year (in the judgment of the central's experts) and, on the other hand, to extend the qualification and polyqualification of the personnel and to form new contingents of specialized workers, especially operators in wood-sorting and -industrialization centers, drivers, operators of cableway skidders and so on.

The attainment of these objectives requires the expansion of the activity of scheduling and supervising the production in each operation and, what is at least just as important, the coordination of the activity of felling, bucking, removal and skidding with that of transportation proper of the wood as early as the phase of preparing the documentation for executing the work. This year, the imperatives of more strictly coordinating the logging capacity with the available transportation capacity, including from a viewpoint of minimizing the technological material consumptions and the cumulative energy consumptions, will have to be taken into account more in adopting the optimum technological variant--of the three variants of action that are prepared at present for the exploitation of each felling area. In this way, according to the studies made, a rise of several tens of thousands of cubic meters of industrial wood in comparison with 1980 is expected to be achieved this year. At the same time, significant savings of energy and motor fuel will be obtained in the wood-harvesting phase by introducing electrically driven power saws, with low specific consumptions, which are to replace the saws that operate on gasoline in the wood-bucking operations both at the fixed points of the sorting centers and at the preindustrialization units, and by expanding in the hard-to-reach sectors the removal of wood with the help of animal traction.

A Steady, Prompt Supply

Among the problems that greatly concern the management personnel and the specialists in the enterprises and the central are also those regarding the technical-material supply. The large number as well as the diversity of the mechanized means and the means of transportation on hand necessitate the providing of the allocated and contracted quantities of motor fuel, spare parts, tires, cables and so on. Unfortunately, part of these supplies are not provided at the proper time in the quantities and quality stipulated by the plan or the STAS [state standards]. Thus, the fact that oil is not furnished in conformity with the requirements for covering a varied range of qualities for different equipment, engines, seasons and so on, besides leading to high consumptions, also affects the proper operation and maintenance of the different mechanisms. It is in the national economy's interest for the refineries to produce and deliver oil in accordance with the range of the mechanized means existing in the inventory of the enterprises, for different seasons (winter and summer), since in this way it is possible to obtain big savings on a national level.

With a view to the economization of derivatives of crude oil, the experts have established the conditions needed for the expansion of transportation by cableway skidder, especially in the hard-to-reach areas of wood exploitation, but the lack of cables is impeding the application of the respective measure. Moreover, the failure to meet the planned need for such products is also endangering the matter of ensuring the operation of the existing cableway skidders in the proper manner. The forestry enterprises did not receive 380 tons of cable last year, and 400 tons of the allocated quota were not delivered to them in the first quarter of this year. The supply bases assert that the situation is due to the nonfulfillment of the delivery plan by the "Cablul Romanesc" Enterprise in Ploiesti and the Metallurgical Combine in Cimpia Turzii.

Special problems are also raised with regard to the tire supply in terms of quantity and assortment. For long periods, 1,100/20 and 1,200/20 tires, 1,400/38 tractor tires and tires for high-capacity vehicles (1 ton and up) are not available. Considering the fact that most of the transportation of wood from the forest to the lumber units and the CFR stations is done with the forestry units' own means, the lack of tires immobilizes a large number of trucks and tractors and thus a smaller quantity of wood is transported, with the requirements of the wood-industrialization units not being met at the proper time and with the necessary assortments.

Lastly, spare parts represent another group of problems. One should bear in mind the great effort made by the central and the units to perform in their own self-equipping shops reconditioning and assimilation of spare parts, whose value came to over 1 billion lei in the last 5-year period. However, there are highly technical subassemblies or spare parts that cannot be made in their own, unsuitably equipped shops. They must be made in the specialized units of the machine-building industry. We have in mind, in particular, spare parts for diesel, Saviem and Raba engines, like crankshafts, crank axles, cylinders, AK 5 and AK 6 gearboxes, piston skirts and so on. It is not a question of oversupplying but of meeting the allocated quotas. Unfortunately, such parts and assemblies are not made by the specialized suppliers at the level of the requests, on which reason the specialized bases of the MATMCGFF /Ministry of Technical-Material Supply and Control of the Management of Fixed Assets/ blame the lack of them for long periods and, in consequence, do not fulfill their obligations to customers. Consequently, there must be greater responsibility and discipline in the achievement of each assortment of subassemblies and spare parts at the quotas of the plan by each supplying unit specializing in such products.

Naturally, great efforts must be made both by the central for forest exploitation and transportation and by the units to raise the degree of management and maintenance of all the means on hand, to rationally utilize motor fuel and spare parts and to perform on their own as many activities as possible of repair and reconditioning of parts and fixed assets and retreading of tires--elements that can help to eliminate the above-mentioned shortcomings in the supply to a considerable extent.

Transportation--a Condition for High Utilization

The providing of all the conditions for properly carrying out transportation is of particular importance in performing the whole activity of exploitation and utilization of timber under conditions of greater efficiency. In this direction, it must always be borne in mind that, in fact, the transportation of wood from the forest to customers represents for the central's units a technological phase of the production flow that directly conditions the achievement of better utilization of wood in the furniture, cellulose and paper factories.

Once cut, gathered, bucked and secured in the felling area, wood has from a technological viewpoint a certain period for drying. The exceeding of this period leads to its qualitative deterioration, it no longer being able to be used for industrial purposes. In this regard, there were in the past and still are at present situations when large quantities of wood not gathered and not delivered on time to customers deteriorated (especially wood coming from windfallen trees, actions of clearing the forest, and lots cut in hard-to-reach areas), causing losses to the national economy. This is why the performance of gathering, selection and transportation at the prescribed times constitutes operations of great importance in the technological plan for utilization of wood. For this reason, certain coordinates must be taken into account in establishing the priorities of action:

Thus far, the specific character of the activity of exploitation of wood has necessitated the granting of priority to automotive transportation among all of the categories of transportation, with it being done even by the enterprises of the Central for Exploitation of Wood, which each have a unit of this kind subordinate to them. The generalization of the introduction of high-capacity motor trains into the activity of transportation and the improvement of the organization and coordination of the activity of exploitation and transportation of wood can and must lead to the marked growth of the quantities of wood transported in a period of time.

Considering the high economic efficiency of the utilization of means of transportation with a high capacity (20-25 cubic meters per motor vehicle)--under the conditions of reducing the fuel consumption by about 10 percent--all the factors involved must act together to reduce to the utmost the stoppages at the loading and unloading points (by mechanizing the raising and lowering operations, by eliminating the waits at the railhead, by suitably dimensioning and steadily supplying the loading points, by closely coordinating the volume of the operations with the transportation capacity, and so on) and to completely utilize the capacity of these means (by loading them to capacity, by optimizing the transportation routes, by providing spare parts and so on). Lastly, more attention must be devoted to making up the arrears in the activity of construction or modernization of suitable forest roads.

The continual growth of the transportation distances due to the increasing remoteness of the felling areas subjected to exploitation from the customers, due to the opening of many secluded forest districts and the entry into the economic circuit of production units situated in difficult conditions of accessibility, and so on also makes it necessary that to the forestry units' own efforts there be added those of the enterprises whose activity directly conditions the transportation of wood to customers (the railroad, the fuel suppliers and so on). Thus, the fact that the transportation of wood to customers is done over medium and long distances with the railroad's means must not be ignored. In this regard, the problem of achieving greater regularity in the providing of cars is raised. Thus, there must be an increase in the responsibility of the managements of the Suceava, Iasi, Craiova, Brasov and Cluj regional railroad units, since, due to the lags in fulfilling the transportation plan especially in these zones, the raw material (that is, semi-industrialized wood) is not provided on time to the industrialization units, and thus difficulties in steadily fulfilling the plan targets are created.

The imperative of saving energy makes necessary a reconsideration of the importance accorded to the promotion of those forms of transportation that best meet this requirement (transportation by water, with teams of draft animals, with means of movement of wood that use gravitational force and so on). In this regard, greater attention is required especially for the transportation of wood with teams of draft animals, a field in which, in fact, an extensive tradition has existed in our country and whose expansion is becoming absolutely necessary due to the significant savings of fuel that it makes possible.

It is also necessary to put into practice more rapidly the studies made with regard to expanding the cable installations that utilize the force of gravity in the transportation of wood, while the motor is used only to pull the load, and on a local level the possibility of returning to slides and sluices, in the utilization of which we have also had a good tradition, should be examined more seriously. Of course, all these actions must be preceded by rigorous calculations of efficiency. Lastly, the tradition of rafting should be revived on a local level, where the conditions permit it. Naturally, it is known that rafting has declined greatly as a result of the construction of hydroelectric dams on the main watercourses, but it is coming back into currency again.

Obviously, the actions of more efficiently organizing the activity of exploitation (presented in the first part of the article) as well as those of a technological order can be improved further--with special tasks devolving in this regard upon each enterprise and the central. In this way, the volume of timber harvested from the same area can rise substantially, while the production costs can fall significantly. As a whole, all these actions must lead to a better supply of industrial wood for the national economy, to a marked increase in the volume of profits through a drop in production costs.

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